

YEAR 2000 AND MEDICARE: IS HEALTH SERVICE DELIVERY AT RISK?

HEARING

BEFORE THE

SUBCOMMITTEE ON GOVERNMENT MANAGEMENT,
INFORMATION, AND TECHNOLOGY

OF THE

COMMITTEE ON
GOVERNMENT REFORM

HOUSE OF REPRESENTATIVES

ONE HUNDRED SIXTH CONGRESS

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YEAR 2000 AND MEDICARE: IS HEALTH SERVICE DELIVERY AT RISK?

MONDAY, SEPTEMBER 27, 1999

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON GOVERNMENT MANAGEMENT,
INFORMATION, AND TECHNOLOGY,
COMMITTEE ON GOVERNMENT REFORM,
Washington, DC.

The subcommittee met, pursuant to notice, at 2 p.m., in room 2154, Rayburn House Office Building, Hon. Stephen Horn (chairman of the subcommittee) presiding.

Present from the Subcommittee on Government Management, Information, and Technology: Representatives Horn and Turner.

Present from the Subcommittee on Technology, Committee on Science: Representative Morella.

Staff present: J. Russell George, staff director/chief counsel; Matthew Ryan, senior policy director; Bonnie Heald, director of communications/professional staff member; Chip Ahlswede, clerk; P.J. Caceres, intern; Trey Henderson, minority counsel; and Jean Gosa, minority staff assistant.

Mr. HORN. The hearing of the House Subcommittee on Government Management, Information, and Technology, in participation with the Subcommittee on Technology of House Science Committee will come to order.

Today, we will hear testimony about the year 2000 preparations needed to guarantee the seamless delivery of health care financing by the Nation's largest health insurer, the Federal Government. Through the Medicare program, the government provides health insurance to more than 39 million senior citizens.

Unfortunately, this massive health insurance program has severe weakness in its year 2000 readiness. Medicare has been identified by the President's Office of Management and Budget as one of the 43 essential Federal programs. Yet, 2 weeks ago, we reported that it is unknown when large portions of the Medicare program will be year 2000 ready.

The outlook did seem alarming, and we hope to hear what the situation is today. As of last week, less than 2 percent of the 230,000 hospitals, nursing homes, doctors and other health care providers who submit claims to Medicare had tested their computer systems with Medicare contractors.

Of the nearly 4,000 health care providers who had begun this testing, many experienced significant failures. Worse, some health providers report that they are just not ready for the January 1st deadline.

We are not here today to be alarmists, but we do want to provide an accurate portrayal of Medicare's Y2K landscape.

In February, we held a hearing to review the Health Care Financing Administration's year 2000 preparations. At the time, the agency's systems were not ready. Since then, however, HCFA has made substantial progress in fixing and testing its systems. We commend them for this very hard work. Yet, equally strenuous work remains.

HCFA has stated that if Medicare providers cannot submit proper claims, health care providers will not get paid. Furthermore, according to HCFA, providers who do not test their claims submissions are not exercising due diligence and, therefore, must be prepared to accept any cash-flow consequences that might arise from this lack of preparation.

We will examine four key areas in the Medicare program today: First, whether the Health Care Financing Administration has completed its final year 2000 computer tests; second, how some Medicare contractors and providers are testing their computer systems; third, the year 2000 preparations of managed care organizations; and, finally, whether the Health Care Financing Administration, Medicare contractors and managed care organizations have developed and tested their business continuity and contingency plans.

Health Care Financing Administration, its contractors and health care providers have only 95 days to find an antidote to strengthen the Nation's health care financing system. They must meet that deadline, because 39 million American seniors are depending on it.

I welcome today's panel of witnesses and look forward to their testimony.

I'll now yield to the co-chairman representing the Subcommittee on Technology of the House Committee on Science for an opening statement, and then I'll yield to the ranking member on the Government Management, Information, and Technology Subcommittee.

[The prepared statement of Hon. Stephen Horn follows:]

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Opening Statement
Chairman Stephen Horn (R-CA)
Subcommittee on Government Management,
Information, and Technology
September 27, 1999

This hearing of the House Subcommittee on Government Management, Information, and Technology, in participation with the Subcommittee on Technology will come to order.

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Unfortunately, this massive health insurance program has severe weaknesses in its Year 2000 readiness. Medicare has been identified by the President's Office of Management and Budget as one of 43 essential Federal programs. Yet, two weeks ago, we reported that it is unknown when large portions of the Medicare program will be Year 2000 ready.

The outlook is alarming. As of last week, less than 2 percent of the 230,000 hospitals, nursing homes, doctors and other health care providers who submit claims to Medicare had tested their computer systems with Medicare contractors.

Of the nearly 4,000 health care providers who had begun this testing, many experienced significant failures. Worse, some health providers report that they are just not ready for the January 1 deadline.

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HCFA has stated that if Medicare providers cannot submit proper claims, health care providers will not get paid. Furthermore, according to HCFA, providers who do not test their claims submissions are not exercising due diligence and, therefore, must be prepared to accept any cash-flow consequences that might arise from this lack of preparation.

We will examine four key areas in the Medicare program today:

- First, whether HCFA has completed its final Year 2000 computer tests;
- Second, how some Medicare contractors and providers are testing their computer systems;
- Third, the Year 2000 preparations of managed care organizations; and
- Finally, whether HCFA, Medicare contractors, and managed care organizations have developed and tested their business continuity and contingency plans.

HCFA, its contractors, and health care providers have only 95 days to find an antidote to strengthen the nation's health care financing system. They must meet that deadline, because 39 million American seniors are depending on it.

I welcome today's panel of witnesses, and look forward to their testimony.

Mrs. MORELLA. Thank you, Mr. Chairman.

Mr. Chairman, this past February we held a hearing that examined the status of the efforts of the Department of Health and Human Services focusing on the Health Care Financing Administration to prepare for the technical challenges associated with the year 2000 problem, and at that hearing the GAO, General Accounting Office, reported the severe difficulties HCFA has experienced with Y2K, stating that, "HCFA and its contractors were severely behind schedule," in preparing, testing and implementing the mission-critical systems that support Medicare.

Faced with this stark finding, there was little or no confidence from the approximately one-quarter of our Nation's population who receive over \$170 billion annually of Medicare and Medicaid assistance that their elderly, disabled or indigent benefits would continue uninterrupted after January 1st, 2000. Subsequent to the hearing, we've seen the agency undertake dramatic actions in management, resources, personnel and funding to correct the Y2K problem. Are these refocused efforts, however, enough to overcome HCFA's auspiciously horrendous start? HCFA says yes, but others and I are not quite so certain.

You have to be concerned when HCFA just last week tells us that only 2 percent of their physicians and hospitals that submit claims to them have tested their computer systems with Medicare contractors, and of those that have tested their systems, 10 to 20 percent have experienced significant failures. These startling facts are obviously not very comforting.

I know that HCFA disputes some of the GAO's conclusions, and I know that both HHS and HCFA have demonstrated a great deal of progress in the last quarter. So I look forward to hearing from our distinguished panel today and especially to hear our witnesses representing other Medicare partners to determine exactly where the agency stands in their Y2K remediation and validation efforts. No less than a successful continuation of our Nation's health and welfare is at stake, especially for those who can least afford a disruption in their health benefits. If there are to be any disruptions, the American people need to know that there should be adequate contingency plans to cover any failures related to Y2K.

So, Mr. Chairman, I look forward to hearing from our witnesses on this critical problem.

[The prepared statement of Hon. Constance A. Morella follows:]

**Opening Statement of
Congresswoman Constance A. Morella**

**Chairwoman, Technology Subcommittee
House Science Committee**

**Hearing on "The Year 2000 Computer Problem and Medicare:
Is Health Service Delivery at Risk?"**

Monday, September 27, 1999

Mr. Chairman , this past February we held a hearing that examined the status of the efforts of the Department of Health and Human Services (HHS) – focusing on the Health Care Financing Administration (HCFA), to prepare for the technical challenges associated with the Year 2000 problem.

At that hearing, the General Accounting Office (GAO) reported the severe difficulties HCFA has experienced with Y2K stating that "HCFA and its contractors were severely behind schedule" in repairing, testing, and implementing the mission-critical systems that support Medicare."

Faced with this stark finding, there was little or no confidence from the approximately one-quarter of our nation's population, who receive over \$170 billion annually of Medicare and Medicaid assistance, that their elderly, disabled, or indigent benefits would continue uninterrupted after January 1, 2000.

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Are these refocused efforts, however, enough to overcome HCFA's auspiciously horrendous start?

HCFA says "yes," but others and I are not quite so certain.

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No less than the successful continuation of our nation's health and welfare is at stake – especially for those who can least afford a disruption in their health benefits.

If there are to be any disruptions, the American people need to know there should be adequate contingency plans to cover any failures related to Y2K.

Mr. HORN. I thank my colleague and now would yield time for an opening statement to the ranking member of the Subcommittee on Government Management, Information, and Technology, Mr. Turner of Texas.

Mr. TURNER. Thank you, Mr. Chairman.

It's good to have all of our witnesses here today to talk about this very important issue. I've always held the opinion that some of the greatest risks facing us with regard to Y2K problems was in the health care industry and HCFA, which relates primarily to the prompt payment of claims and ensuring the system works. We know that that is a critical part.

There are many hospitals today that a short disruption in payments could represent financial destruction for them. So I think it's very important that we continue to pay attention to this issue, as we have done through several meetings of this committee held jointly with Chairwoman Morella and her subcommittee.

I do believe that in February we found that there were problems remaining at HCFA. I do understand that much progress has been made in the last few months; and, of course, the purpose of our hearing today is to address the remaining areas of concern that we have at the committee.

I thank the Chair for continuing to stay on top of this very important matter because, after all, HCFA is the largest health insurer in the entire Nation and pays out \$288 billion a year. It's a very important agency to the many billions of Americans who depend upon Medicare for their health care.

Thank you, Mr. Chairman.

[The prepared statement of Hon. Jim Turner follows:]

STATEMENT OF THE HONORABLE JIM TURNER
HEARING ON "YEAR 2000 AND MEDICARE: IS HEALTH SERVICE
DELIVERY AT RISK?"
SEPTEMBER 27, 1999

Thank you, Mr. Chairman. The focus of this hearing is to assess the status of the Health Care Financing Administration's (HCFA) progress in combating the Y2K problem. As the nation's largest health care insurer -- Medicare expects to pay about \$288 billion annually by the Year 2000 -- the consequences of HCFA's systems not being Y2K compliant could be enormous. In September 1998, the General Accounting Office (GAO) reported that HCFA and its contractors were behind schedule in repairing, testing, and implementing the mission-critical systems supporting Medicare. At that time, GAO concluded that it was highly unlikely that all Medicare systems would be compliant in time to ensure uninterrupted delivery of benefits and services.

On February 26, 1999, this Subcommittee held a hearing to examine HCFA's preparations for the Y2K computer problem. We found that HCFA was indeed behind schedule, thus placing the Medicare program at risk.

To date, HCFA has made significant progress and believes that it maintains a low Y2K risk. All of HCFA's internal systems have been renovated, end-to-end tested, certified compliant, and implemented. In addition, all of the external claims processing systems, those operated by private insurance contractors that process Medicare fee-for-service claims and pay bills, have been fully tested and certified as compliant, and are processing claims today. HCFA's independent verification and validation (IV & V) expert, with oversight from the Department's

Inspector General and GAO, has verified the readiness of these external claims processing systems.

While I want to commend the Agency for its hard work, several crucial issues currently remain. HCFA still needs to: (1) develop and review integrated testing plans for its business partners, (2) complete independent tests of standard systems, (3) resolve managed care organizations' certification qualifications expeditiously, (4) monitor health care provider testing with contractors, and (5) validate fee-for-service and managed care organizations' business continuity and contingency plans. Nonetheless, HCFA maintains that adequate time exists and that it is committed to taking the necessary steps to ensure that its beneficiaries are not adversely affected by the Y2K challenge.

We need to ensure that Y2K preparedness and contingency planning at HCFA are completed on time. If not, millions of beneficiaries who depend on HCFA for healthcare could be affected. I look forward to the testimony today, and I want to commend the Chairman for his focus on this important issue.

Mr. HORN. Thank you very much.

Let me explain how this subcommittee functions. We would like—because we do have your statements, we'd like it if you could summarize between 5 and 10 minutes each of your statements. That will give us more of an opportunity for dialog among the panel, as well as dialog with the members and the panel, but don't feel bad if you worry about the 5 to 10. Just take the time you need to tell the story, and if we can tell it succinctly, that helps.

The other thing is that we do submit all of our witnesses and their staff that might tell them what the answer is on questions, we are really down to, as an investigative committee, to giving the oath. So if you don't mind standing and putting up your right hands, with the people that will advise you also taking the oath, then I don't have to have 18 baptisms here.

[Witnesses sworn.]

Mr. HORN. I have six witnesses, and I have six helpers, all of which are important. So let us just go down the way we have it on the agenda.

That's Mr. Willemssen, the Director of Civil Agencies Information Systems, U.S. General Accounting Office. He's been our principal witness at every system I think this last year, be it in the States or overseas or here, wherever. So he has a lot of knowledge, and we'd appreciate his summary of what the GAO has done in terms of their studies on Medicare in particular.

Mr. Willemssen.

**STATEMENT OF JOEL WILLEMSEN, DIRECTOR, CIVIL AGEN-
CIES INFORMATION SYSTEMS, U.S. GENERAL ACCOUNTING
OFFICE**

Mr. WILLEMSEN. Thank you, Chairman Horn, Chairwoman Morella, Ranking Member Turner. Thank you for inviting GAO to testify today. As requested, I will briefly summarize our statement on the readiness of Medicare and Y2K.

HCFA continues to make progress in its efforts to address numerous Medicare Y2K issues. For example, HCFA is more effectively identifying and managing risks. It also is more effectively managing its electronic data exchanges and has improved its testing program.

HCFA has also shown progress in the development of its business continuity and contingency plans and has taken comprehensive measures in conducting numerous Y2K outreach activities.

Even with this progress, however, HCFA still faces a considerable amount of work and challenges over the next few months. For example, HCFA is using a less than ideal approach of having key claims processing systems tested concurrently. Because of the limited time remaining, HCFA, though, has little choice but to test in this manner. This approach invites additional risk because resolving one system's testing errors can lead to problems in another system that's being tested at the same time. Therefore, HCFA must aggressively manage these risks through an integrated testing schedule that defines interdependencies and a critical path, establishing the sequence in which tasks must be completed.

In addition to these system interdependencies, ongoing testing of contractors' systems continues to identify errors, some of which

would result in Y2K failures. HCFA's use of system quality assurance tools also continues to find system problems that will need to be resolved in the short time remaining.

HCFA also will need to carefully manage contractor transitions to a new data center that is planned between now and early November and will have to implement its policy of minimizing system changes during the rollover period.

HCFA faces challenges in several other areas. For example, as noted earlier by you, Chairwoman Morella, contractor progress and testing with providers has been disappointing. The most recent available HCFA information shows that more than half of HCFA's contractors have tested with less than 1 percent of their providers, and for the testing that has been done an error rate of 10 to 20 percent is being reported.

In addition to fee-for-service contractors, many of Medicare's beneficiaries are enrolled in managed care organizations. The available data on the Y2K status of these organizations also raise concerns. In June, only 4 of 425 of these organizations were reporting that they were fully compliant. Further, HCFA's Y2K risk assessments of managed care organizations showed that 94 of them were considered high risk.

To ensure that managed care organizations are adequately addressing Y2K, HCFA is conducting site visits covering 184 of these organizations; and as part of our ongoing work for the Senate Special Committee on Aging, we plan to followup on HCFA's actions in this area.

Given the magnitude of the challenges that HCFA faces, the development of business continuity and contingency plans is crucial. HCFA has completed its agency-wide business continuity and contingency plan that includes 29 internal plans. However, essential validation activities still remain.

Regarding contractor business continuity and contingency plans, their status is essentially unknown. Our assessment of available plans revealed that most contractors did not have specified detailed procedures that are required for executing and testing the plans.

The status of contingency plans for managed care organizations is also not encouraging. By early September HCFA had received plans from over 300 of these managed care organizations. However, its review concluded that about 69 percent of them needed major improvement.

In conclusion, it's clear that HCFA has made substantial progress on Y2K over the last several months. Nevertheless, the agency still faces a considerable amount of work and challenges over the next few months to ensure that Medicare providers will be made paid and beneficiaries will continue to receive care.

Thank you.

Mr. HORN. Thank you very much.

[The prepared statement of Mr. Willemsen follows:]

United States General Accounting Office

GAO

Testimony

Before the Subcommittee on Government Management,
Information, and Technology, Committee on Government
Reform, and the Subcommittee on Technology, Committee
on Science, House of Representatives

For Release on Delivery
Expected at
2 p.m. EDT
Monday,
September 27, 1999

**YEAR 2000
COMPUTING
CHALLENGE**

**HCFA Action Needed to
Address Remaining
Medicare Issues**

Statement of Joel C. Willenussen
Director, Civil Agencies Information Systems
Accounting and Information Management Division



GAO/T-AIMD-99-299

Mr. Chairman, Ms. Chairwoman, and Members of the Subcommittees:

Thank you for inviting us to participate in today's hearing on Medicare Year 2000 (Y2K) issues. Successful Y2K conversion of the automated systems that are used by the Department of Health and Human Services' (HHS) Health Care Financing Administration (HCFA) and its contractors to process Medicare claims is essential to ensuring that the delivery of health care services to millions of Americans is not negatively impacted.

We initially reported on HCFA's Y2K program in 1997, making recommendations to improve the agency's program management.¹ In our last report in April 1999, we stated that HCFA had been responsive to our recommendations, but that critical Y2K risks and challenges remained.² At that time, we also reported that HCFA's final tests of its mission-critical systems that are expected to be completed by November 1, 1999, will ultimately determine whether HCFA's systems are Y2K compliant. Due to the late time frames associated with these final tests and the many challenges still confronting HCFA, we stressed the importance of the agency's business continuity and contingency planning efforts.

As requested, after a brief background discussion, today I will summarize HCFA's progress in addressing its Y2K challenges to date, and describe the key challenges that

¹ Medicare Transaction System: Success Depends Upon Correcting Critical Managerial and Technical Weaknesses (GAO/AIMD-97-78, May 16, 1997).

² Year 2000 Computing Crisis: Readiness of Medicare and the Health Care Sector (GAO/T-AIMD-99-160, April 27, 1999).

confront HCFA in completing the final Y2K tests of its mission-critical systems by November 1, 1999. I will also discuss that HCFA must (1) ensure that Medicare contractors are testing with providers, (2) monitor managed care organization's (MCO) efforts to address their Y2K risks, and (3) complete and validate internal, contractor, and MCO business continuity and contingency plans.

BACKGROUND

Medicare is the nation's largest health insurer, serving about 39 million Americans by providing federal health insurance to individuals 65 or older and to many of the nation's disabled. By 2000, HCFA expects to process over 1 billion claims and pay \$288 billion in fee-for-service and managed care benefits annually. The consequences, then, of its systems' not being Year 2000 compliant could be enormous.

Medicare Claims Processing Systems Are Numerous and Complex

HCFA operates and maintains 25 internal mission-critical systems; it also relies on 75 external mission-critical systems operated by contractors throughout the country to process Medicare claims. These external systems consist of 68 claims processing contractor systems, 6 standard systems, and the Common Working File (CWF). Each of the claims processing contractor systems relies on one of the six standard systems to process its claims, adding its own front-end and back-end processing systems. The CWF is a set of databases located at nine sites that works with internal and external systems to authorize claims payments and determine beneficiary eligibility.

In addition to the 25 internal and 75 external contractor systems, the claims process involves over 1 million healthcare providers and numerous banks serving both contractors and providers. HCFA also relies on external systems located at 383 MCOs. Although HHS has not designated the MCOs as mission-critical in its Y2K quarterly status reports to the Office of Management and Budget (OMB), these systems are nevertheless vital since they are used to serve 6.9 million of the 39 million Medicare beneficiaries.

Past Recommendations to Improve HCFA's
Management of Its Medicare Y2K Program

We originally highlighted our concerns with HCFA's management of Medicare Y2K in May 1997.³ At that time, we made several recommendations for improvement, including that HCFA identify responsibilities for managing year 2000 actions and that Medicare contractors submit to HCFA their Y2K plans and validation strategies. In our report last September, we warned that although HCFA had made improvements in its Year 2000 management, the agency and its contractors were severely behind schedule in making mission-critical systems that process Medicare claims Year 2000 compliant.⁴ Our conclusions and recommendations at that time reflected our concern about the high level of risk and large number of tasks still facing HCFA. Among our specific recommendations was that the HCFA Administrator

³ GAO/AIMD-97-78, May 16, 1997.

⁴ Medicare Computer Systems: Year 2000 Challenges Put Benefits and Services In Jeopardy (GAO/AIMD-98-284, September 28, 1998).

- rank remaining Year 2000 work on the basis of an integrated project schedule and identify the Y2K project's critical path to ensure that all critical tasks were prioritized and completed in time to prevent unnecessary delays;
- develop a risk management process;
- ensure that all external and internal systems' data exchanges had been identified and agreements signed among exchange partners;
- define the scope of an end-to-end test of the claims process and develop plans and a schedule for conducting such a test; and
- accelerate the development of business continuity and contingency plans.

This February, we testified that, although HCFA had been responsive to our recommendations and that its top management was actively engaged in its Year 2000 program, its reported progress was highly overstated.⁵ We reported that none of HCFA's 54 external mission-critical systems reported by HHS as compliant as of December 31, 1998, was Year 2000 ready because all had important associated qualifications (exceptions), some of them significant. Further, we reported that HCFA continued to have serious Year 2000 challenges, including a significant amount of testing since

⁵ Year 2000 Computing Crisis: Readiness Status of the Department of Health and Human Services (GAO/T-AIMD-99-92, February 26, 1999).

changes would continue to be made to its mission-critical systems to make them compliant.

In April, we testified that HCFA reported that most of the qualifications associated with HCFA's mission-critical systems had been resolved.⁶ Further, we noted that HCFA had continued to be responsive to our recommendations in critical areas such as managing its electronic data exchanges and developing business continuity and contingency plans. Nevertheless, critical Y2K risks and challenges remained. For example, we reported that the mission-critical systems HCFA deemed compliant were not the final systems that would be processing Medicare claims on January 1, 2000, because these systems were to undergo a significant amount of change between then and July 1, 1999, for both Y2K-related and other reasons. In addition, we reported that HCFA's testing to date of external systems had not been rigorous. Therefore, we stressed the importance of HCFA's final recertification tests, planned to occur between July 1 and November 1, 1999.

HCFA's ACTIONS TO ACHIEVE COMPLIANCE AND BOLSTER
OUTREACH EFFORTS TO MEDICARE PROVIDERS

HCFA continues to be responsive to our recommendations and make progress in its Y2K efforts. To more effectively identify and manage risks, HCFA is relying on multiple sources of information, including test reports, reports from its independent verification and validation (IV&V) contractors, and weekly status reports from its contractor

⁶ GAO/T-AIMD-99-160, April 27, 1999.

oversight teams. In addition, HCFA has stationed staff at critical contractor sites to assess the data being reported to them and to identify problems.

HCFA is also more effectively managing its electronic data exchanges. It issued instructions to its contractors to inform providers and suppliers that they must submit Medicare claims in an 8-digit format by April 5 of this year. On September 22, HCFA reported that 99 percent of Part A providers and all Part B providers were using the 8-digit format for claims submissions.⁷ HCFA also issued new instructions to contractors for reporting on data exchanges and created a new database to track status.

HCFA has also acted to improve its Y2K testing program. For example, it has more clearly defined its testing procedures for its contractors⁸ and is using Y2K analysis tools to measure its testing thoroughness. In addition, HCFA has improved its test coverage (e.g., systems functionality, HCFA-mandated dates, interface coverage) of the external systems. In April 1999, we reported that HCFA's IV&V contractor had concerns with the documentation of external systems' test coverage associated with Y2K testing to date.⁹ HCFA issued instructions on April 9, 1999, that required each contractor to submit a traceability matrix that listed the business functions covered by the recertification tests.

⁷ Part A claims are those submitted by hospitals, skilled nursing facilities, hospices, home health agencies, and rehabilitation agencies. Part B claims are those submitted by physicians, laboratories, durable medical equipment suppliers, outpatient providers, and other practitioners.

⁸ Between February 2, 1999 and September 22, 1999, HCFA issued 19 updates to its recertification instructions to more clearly define its testing procedures.

⁹ GAO/T-AIMD-99-160, April 27, 1999.

Some HCFA contractors continue to improve their test coverage by adding test cases¹⁰ to their traceability matrices.

In addition, an independent testing contractor is conducting tests on the six standard systems and the CWF. HCFA also plans to perform end-to-end testing with its Year 2000-compliant test sites. These end-to-end tests are to include all internal systems and contractor systems; however, they will not include testing with banks and providers.

Another area in which HCFA has demonstrated progress is the development of its overall business continuity and contingency plan, which includes 29 internal plans. The agency established cross-organizational workgroups to develop contingency plans for the following core business functions: health plan and provider payment, eligibility and enrollment issues, program integrity, managed care, quality of care, litigation, and telecommunications. HCFA's fifth iteration of its overall business continuity and contingency plan (BCCP) was issued on July 1, 1999; the internal plans are currently being validated.

As we have also reported, HCFA has taken comprehensive measures in conducting its outreach activities.¹¹ Outreach activities include information dissemination as well as presentations and conferences. For example, the HCFA Administrator sent out individual letters to over 1.1 million Medicare providers in January and May of this year, alerting

¹⁰ A test case is a series of test scripts that identifies each testable condition of a system (including valid and invalid conditions), the associated inputs, and the expected results.

¹¹ Year 2000 Computing Crisis: Status of Medicare Providers Unknown (GAO/AIMD-99-243, July 28, 1999).

them to take prompt Year 2000 action on their information and billing systems. HCFA has also established a toll-free information hotline and plans to film a four-part series in conjunction with the Health and Science television network that is to be broadcast to hospitals and nursing facilities. In addition, as of June 25, 1999, the agency had held 12 Year 2000 conferences throughout the country, and is planning to hold 10 more. Further, HCFA has a web site dedicated to Year 2000 issues which contains information and advice to providers on how to assess readiness, test systems, and develop contingency plans.

KEY CHALLENGES REMAIN IN TESTING
MISSION-CRITICAL SYSTEMS

Although HCFA has improved its Y2K testing program, it still faces several hurdles to completing its recertification tests by November 1, 1999. With only 5 weeks remaining to complete these critical recertification tests, HCFA has much work ahead.

Unfortunately, this tight schedule is not being guided by an overall plan because HCFA has not yet completed a detailed integrated testing plan, including a critical path. In addition to executing the recertification tests and resolving any errors that are discovered, HCFA is concurrently addressing other issues uncovered by Y2K assessment tools.

Further, HCFA is in the process of transitioning six contractors to new data centers. Each of these overlapping efforts introduces risks that could adversely affect the recertification testing of HCFA's mission-critical systems.

HCFA's Recertification Testing Program Is Not Being Guided
by An Integrated Testing Plan That Identifies the Critical Path

In September 1998 we recommended that HCFA rank its remaining Y2K work on the basis of a schedule that included milestones for renovation and testing of all systems, and that it include time for end-to-end testing and identify the critical path.¹² Such a schedule is extremely important because of the number of systems, their complexity, and interdependencies among them.

The required sequencing of the 75 external and 25 internal systems associated with the recertification requires an integrated testing schedule to avoid testing overlap and scheduling constraints. Since each contractor relies on the CWF and one of the six standard systems to process its claims, these systems should be completely tested before the contractors test their front-end and back-end processing systems with their respective standard systems.

Given the limited time remaining, it is not possible for HCFA to conduct the recertification testing in the optimal sequence. Therefore, testing overlap is planned to occur—the 68 claims processing systems, 6 standard systems, and CWF are being concurrently tested. This testing approach is risky because it results in managing multiple testing baselines and creates challenges in ensuring that resolving one system's

¹² GAO/AIMD-98-284, September 28, 1998.

testing errors do not lead to problems in another system. For example, each of the 68 contractors has tested with multiple versions of the CWF and their respective standard system that have been changed to address Y2K errors identified during the recertification testing.¹³ HCFA officials acknowledge the added risk associated with this testing overlap of the CWF, standard systems, and contractor systems.

Given that HCFA does not have enough time to conduct the recertification tests in the proper sequence, it must now aggressively manage the risks associated with the testing overlap. HCFA officials believe the risks are manageable due to their oversight of contractor Y2K efforts. However, effectively managing these risks calls for a more precise and focused effort; namely, an integrated testing schedule that defines individual system schedules and their interdependencies. Unfortunately, HCFA still does not have such a schedule. Although HCFA has a high-level integrated project plan that contains activities associated with its Y2K program, this plan does not identify individual system testing schedules or the interdependencies among all internal and external systems. In addition, it does not include the detail necessary to identify the critical path that would establish the sequence in which tasks must be completed to ensure that this complex undertaking can be finished on time. Such a critical path remains an essential tool that HCFA needs to have to manage risks.

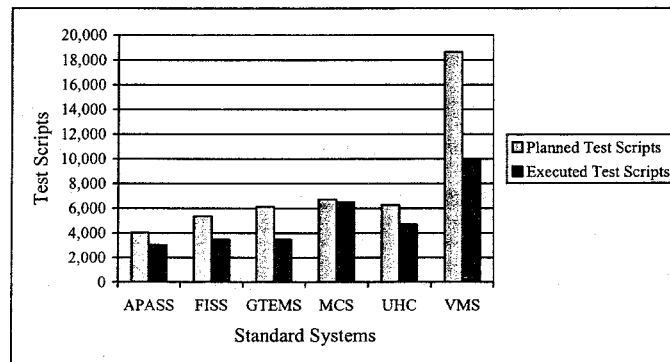
¹³ On September 24, 1999, HCFA officials told us that since the recertification testing began, the CWF has been changed three times and that each of the standard systems has also been changed.

HCFA Needs to Monitor Recertification Test Execution
by Contractors and Address Y2K Errors Expediently

In addition to the challenge posed by the many system interdependencies, HCFA is making progress in the individual recertification testing of each of the six standard systems and the CWF; however, this progress is uneven. For example, the MCS standard system contractor has executed 6,509 of its planned 6,734 recertification test scripts (97 percent), while the CWF contractor has only executed 55,606 of its 112,418 planned test scripts (49 percent). Figure 1 shows the number of test scripts for each of the six standard systems planned to be completed by October 8, and those actually completed as of August 31, 1999.¹⁴

¹⁴ In obtaining comments on a draft of this testimony, HCFA officials told us that they provided GAO with incorrect information on the number of CWF planned recertification test scripts as of August 31, 1999. They added that the correct number is 15,002 and that as of September 24, 1999, 14,877 of these had been executed. They also provided updated information on planned and executed test scripts for the six standard systems. We did not present this updated information since HCFA officials were unable to provide supporting documentation nor were they able to provide the number of failures associated with these executed test scripts.

Figure 1: Recertification Test Scripts Planned and Reported Executed for the Six Standard Systems as of August 31, 1999¹⁵



Source: HCFA.

The executed test scripts as of August 31, 1999, for the six standard systems and the CWF have uncovered Y2K errors, as shown in Table 1.

¹⁵ The six standard systems consists of two Part A systems—Arkansas Part A Standard System (APASS) and Fiscal Intermediaries Standard System (FISS)—and four Part B systems—GTE Medicare System (GTEMS), Medicare Claims System (MCS), United Healthcare (UHC), and VIPS Medicare System (VMS).

Table 1: Reported Failed Test Scripts for the Six Standard Systems and the CWF as of August 31, 1999

	APASS	FISS	GTEMS	MCS	UHC	VMS	CWF
Priority 1,2	3	0	0	0	12	4	0
Priority 3,4,5	3	3	1	28	127	1	3,236

Source: HCFA.

As defined by HCFA, the priority 1 and 2 failures represent errors that would result in Y2K failures of the system. The priority 3, 4, and 5 errors represent lesser impacts, such as those for which there is either an alternative work-around, those that do not affect a required mission capability, or those that were reported as an operator error that need to be retested. Because of the significance of the priority 1 and 2 failures, these not only require correction, but the systems changes to address them need to be retested to ensure that these changes do not introduce additional errors. Since the final recertification tests will ultimately determine whether HCFA's mission-critical systems are Y2K compliant, it is essential that HCFA and its IV&V contractor closely monitor test execution and the resolution of these errors.

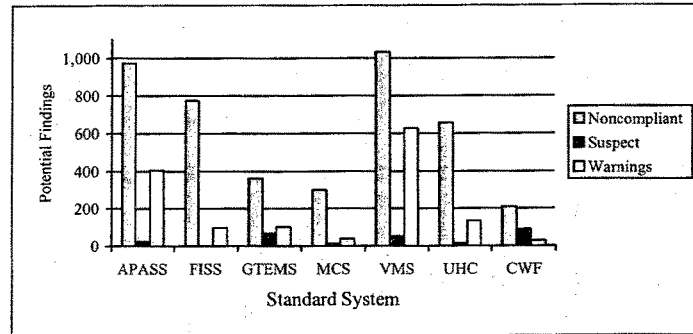
HCFA Needs to Assess Y2K Renovation Quality and Test Coverage Using Automated Tools

As an additional mechanism to ensure that mission-critical systems are free of Y2K errors and that ongoing recertification testing is adequate, HCFA is using Y2K analysis tools on each of the six standard systems and the CWF. These tools are to determine (1)

the Y2K readiness of the software code (i.e., Y2K renovation quality) and (2) the adequacy of test coverage.

Preliminary results of the Y2K renovation quality tool reveal Y2K errors in the code. This tool identifies potential Y2K errors in three categories—(1) Y2K noncompliant errors, (2) suspect errors that may have a Y2K impact, and (3) warnings that have the potential for Y2K problems—that must be further analyzed to determine if indeed they are Y2K problems. For example, the FISS standard system had 775 noncompliant findings and 100 warnings identified by the renovation quality tool; but, according to HCFA officials, an analysis of the 875 potential problems found 49 actual Y2K problems, 2 of which required renovation. In addition, HCFA officials told us on September 24, 1999, that 7 updates to the VMS standard system have already occurred to address Y2K problems uncovered by the renovation quality tool. Figure 2 presents the preliminary results of executing the renovation quality tool for the six standard systems and the CWF.

Figure 2: Preliminary Results of the Renovation Quality Tool for the Six Standard Systems and the CWF



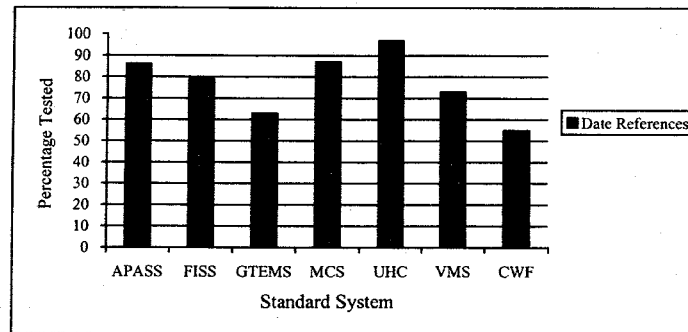
Source: HCFA.

Until this analysis is complete, the extent of programming errors that must be renovated and retested is unknown. Additionally, the utility of this tool is minimized if the analysis of the results is not completed quickly and any necessary changes are incorporated into the recertification testing program. On September 24, 1999, HCFA officials told us that they have established an October 1, 1999, deadline for completing this analysis.

Turning to the test coverage tools, results reveal some systems with low test coverage. HCFA uses two Y2K tools that assess test coverage by identifying the total number of

date references tested.¹⁶ The results of these tools are analyzed, and inadequate test coverage results are remedied by adding test cases. Figure 3 shows the percentage of the date references tested for each of the standard systems and the CWF.¹⁷

Figure 3: Date References Tested for the Six Standard Systems and the CWF



Source: HCFA.

Of particular concern are the lower percentages for the GTEMS and, most importantly, the CWF, which is the heart of the Medicare Claims Processing System. To its credit, HCFA is asking these standard system contractors to improve their test coverage by adding test cases to the ongoing recertification tests. However, HCFA has

¹⁶ Date references are the actual dates in the computer system.

¹⁷ Due to time constraints, HCFA is not running the test coverage tool on all code associated with the six standard systems and the CWF. Rather, according to HCFA officials, it has decided to run the tool on just the eligibility and claims processing portions of these systems, since these are the critical software components for processing Medicare claims.

limited time to plan, execute, and analyze the results of additional test cases. Therefore, it should establish a deadline to accomplish each of these activities.

HCFA Needs to Expedite Contractor Transitions to New Data Centers

The recertification testing for 6 of the 68 contractors has recently been delayed due to the recent departure of a data center¹⁸ that had been providing service to these 6 contractors. These six contractors now have to be transferred to other data centers. Because these six transitions are scheduled to occur between mid-September and early November, these contractors will not be able to complete their recertification testing by November 1. The six contractors intend to complete the recertification testing by December 1, covering the two most immediate planned HCFA testing dates rather than all of the required four future date recertification tests.¹⁹ HCFA needs to expedite the transitions to these new data centers and recertification testing associated with these six contractors because of the limited time available to address any schedule delays or problems identified in the recertification testing.

¹⁸ HCFA has 23 data centers--large claims processing operations that operate one or more of the standard systems for one or more of the 68 contractors. A data center may also be a host site for the CWF.

¹⁹ HCFA's recertification is to test four future dates--12/31/1999 rollover to 1/4/2000, 2/27/2000 rollover to 3/2/2000, 9/30/2000, and 12/30/2000 rollover to 1/2/2001.

HCFA Needs to Minimize System Changes through March 31, 2000

As noted in our January 1999 testimony, changes made to systems after they have been certified as Y2K compliant can introduce new Y2K problems.²⁰ To address this risk, we suggested that the Office of Management and Budget (OMB) consider directing agencies to adopt a strong change management policy—one that limits new software and systems changes.

In response to our suggestion, in May, OMB issued a memorandum to federal department heads stating the importance of considering the potential effect of changes to information technology systems on Y2K readiness, and urging agency heads to adopt a policy that only allows system changes where absolutely necessary. OMB also requested that agency heads summarize in their quarterly Y2K progress reports how they would implement such guidance.

HCFA has acted to implement OMB's request. Specifically, HCFA reported on June 3, 1999, that it implemented controls to minimize system changes after July 1. In addition, HHS reported in its August 1999 quarterly report to OMB that HCFA's formal moratorium that halts systems changes to Y2K-certified systems is October 1, 1999, through March 31, 2000. HHS' quarterly report also states that exceptions to the

²⁰ Year 2000 Computing Crisis: Readiness Improving, But Much Work Remains to Avoid Major Disruptions (GAO/T-AIMD-99-50, January 20, 1999).

moratorium may be allowed through a strict approval process. Such an exception is HCFA's planned October 1999 and January 2000 provider payment updates. In April, we reported that these updates contribute to HCFA's already monumental testing challenge. However, HCFA officials told us that these updates are minor and that they do not expect them to impede the recertification testing program.

OTHER CRITICAL RISKS AND CHALLENGES REMAIN

In addition to the challenges associated with its recertification testing, HCFA must also address three other critical areas. First, contractor progress in testing with providers has been limited. Second, many managed care organizations (MCOs) have outstanding issues to address in order to become Y2K compliant. Finally, HCFA needs to complete and validate internal, contractor, and MCO business continuity and contingency plans.

HCFA Needs to Monitor Provider Testing with Contractors

In addition to individual systems testing, HCFA must also test its systems end-to-end to verify that defined sets of interrelated systems, which collectively support an organizational core business function, will work as intended. Since providers submit Medicare claims through claims processing contractors, HCFA has tasked these contractors to future date test with their respective providers and encouraged providers to take advantage of the opportunity to future date test with contractors. In March 1999, HCFA required all Medicare contractors to establish a test environment that would allow

Medicare claims from providers and submitters²¹ to be validated in a future date environment. In May 1999, HCFA further defined this requirement by establishing a goal for contractors to future date test with providers that represent at least 50 percent of the annual claims volume.

In July, we reported that contractor testing with providers/submitters had been limited and testing that had occurred had identified problems.²² Specifically, as of June 21, 1999, 38 of 68 contractors had not initiated any testing with their respective providers. Of the remaining 30, only 1 had tested with more than 1 percent of its respective providers. We also reported that, according to HCFA's web site, the one Medicare contractor that completed substantial testing of 434 providers encountered initial problems with 123 (28 percent); 9 of these were critical failures that produced dates of 1900 and 1901 during the testing process. We also reported that contractor/provider testing only identifies problems with data exchanges. Accordingly, it does not address whether providers' systems that process Medicare claims are Y2K compliant.

HCFA's latest information on contractor/provider testing continues to be discouraging. As of September 21, 1999, HCFA's data showed that of 75 contractors, 69 have initiated testing with their respective providers.²³ However, HCFA reports that 40 of the 69 contractors have tested with less than 1 percent of their providers. Table 2 shows the

²¹ Submitters are third-party billers or clearinghouses that bill for providers.

²² GAO/AIMD-99-243, July 28, 1999.

²³ HCFA's most recent data on contractor/provider testing lists 75 instead of 68 claims processing contractors, because HCFA tracks this testing by identification number and some contractors have been assigned more than 1 identification number.

percentage of providers that have future date tested with each of the 69 contractors.

Table 2: Contractor/Provider Testing Status as of September 21, 1999

Number of Contractors	Providers That Have Tested With Contractors
40	Less than 1 %
22	1 to 4 %
6	6 to 12 %
1	100 %
Total	69

Source: HCFA.

HCFA also continues to report that Y2K failures are occurring during provider/contractor testing. On September 22, HCFA's chief information officer reported that 10 to 20 percent of the providers/submitters who have tested with contractors have experienced failures due to incorrect claim dates. These failures were attributed to provider hardware and software problems. Concerning HCFA's goal to test with providers/submitters who represent 50 percent of their total claims volume, HCFA reports that only 9 contractors have met this goal as of September 20, 1999.

HCFA and the President's Council on Y2K Conversion also have concerns about providers' Y2K readiness. HCFA officials told us that, despite their outreach efforts to the provider community, providers are reluctant to test with Medicare contractors. The President's Council on Y2K Conversion, established in February 1998 to, among other things, increase awareness of and gain cooperation in addressing the Year 2000 problem

in various economic sectors, also recently highlighted concerns about the compliance status of health care provider record keeping and billing systems. The Council reported last month that Y2K failures in these billing and record keeping systems, if not promptly addressed, could interfere with normal payment processes and force smaller, cash-strapped providers to suspend operations.²⁴

Until these data exchanges between providers and contractors are future date tested, the ability of these entities to process Medicare claims in a future date environment is unknown. Therefore, it is essential that HCFA continue to monitor and publicize provider testing with contractors and establish milestones for contractors to test with providers.

HCFA Needs to Ensure that Managed Care Organizations Are Y2K Compliant

In addition to fee-for-service contractors, 6.9 million of Medicare's 39 million beneficiaries are currently enrolled in 383 MCOs. In January 1999, HCFA required that by April 15, 1999, the MCOs certify their systems as Year 2000 compliant. We testified in April that HCFA had received certifications from 315 MCOs and that, similar to the claims processing contractors, 271 of the 315 contained qualifications (exceptions).²⁵

²⁴ The President's Council on Year 2000 Conversion: Third Summary of Assessment Information, August 5, 1999.

²⁵ GAO/T-AIMD-99-160, April 27, 1999.

HCFA's most recent data on these certifications continue to be of concern. HCFA had received certifications from 425 MCOs,²⁶ and reported that as of June 1999, 365 of the 425 certification statements contained qualifications (86 percent) and that only 4 were Y2K compliant. The President's Council on Year 2000 Conversion also recently highlighted concerns about the Y2K readiness of MCOs. The Council reported in August that serious concerns exist with MCOs that either started late in addressing the problem or have yet to take significant steps toward achieving full Year 2000 readiness.²⁷

To focus the limited remaining time on the higher risk MCOs, HCFA, with assistance from a contractor, performed a risk assessment of each of the 425 MCOs using the certification statements and the associated qualifications, along with other criteria.²⁸ HCFA's June 1999 risk assessment concluded that

- 94 MCOs are high risk (22 percent),
- 314 MCOs are medium risk (74 percent), and
- 17 MCOs are low risk (4 percent).

²⁶ Since July 1999, the number of MCOs decreased from 425 to 383, because 52 left the Medicare program while 10 new MCOs joined.

²⁷ The President's Council on Year 2000 Conversion: Third Summary of Assessment Information, August 5, 1999.

²⁸ The other criteria were size, tax status, corporate experience, sole MCO in region, data exchanges, Year 2000 risk assessment, contingency planning, independent verification and validation, monitoring of results, centralized management, delegation, stability, and system compliance.

To ensure that reported qualifications are being addressed and that these MCOs are adequately addressing their Year 2000 challenges, HCFA is conducting site visits covering 184 MCOs, which includes the 94 high-risk MCOs. According to HCFA, the 184 serve about 90 percent of the 6.9 million MCO Medicare beneficiary population. HCFA officials told us that they are using the self-reported results of a Medicare Y2K survey by the HHS Office of the Inspector General to follow up on the status of the MCOs not covered in the site visits. The Inspector General survey results are expected to be released by the end of this month.

Although HCFA's "risk-approach" to determining the Y2K status of MCOs has been useful, it is essential that HCFA now focus on the resolution of reported qualifications and whether each of the MCOs is Y2K compliant. On January 25, 1999, HCFA instructed MCOs that a formal recertification would be required later in 1999; however, HCFA officials now tell us they have decided that a formal recertification will not be required. Without such a recertification, risks are enhanced that MCOs will experience Y2K-related disruptions. Accordingly, we believe that HCFA should reconsider this decision. As part of our ongoing work for the Senate Special Committee on Aging, we plan to review the resolution of the qualifications associated with MCO certifications and HCFA's follow up actions to determine whether each MCO is Y2K compliant.

HCFA Needs to Complete and Validate Internal Contractor
and MCO Business Continuity and Contingency Plans

Given the magnitude of the many challenges that HCFA continues to face, the development of business continuity and contingency plans (BCCPs) to ensure continuity of critical operations and business processes is essential. HCFA continues to make steady progress on its agencywide and 29 internal BCCPs; however, the status of contractor plans is unknown, and the results of HCFA's initial review of MCO plans are not promising.

HCFA has completed its agencywide BCCP that includes 29 internal plans; however, essential validation activities remain. As of September 2, 1999, HCFA reported that they had procedurally validated 25 of these 29 plans.²⁹ Of the remaining four plans, it plans to procedurally validate 3 of them. The remaining BCCP—Medicare contractor management—does not require validation because it is currently being used to guide contractor transitions, according to agency officials. In addition to the procedural validations, HCFA reports that 11 of the internal plans require additional validation through extensive simulation and/or operational reviews.³⁰ It is unclear when these more detailed validations will be completed since HCFA has missed its latest milestone of August 30, 1999, to validate BCCPs and has not yet established a new deadline. Such

²⁹ According to HCFA, procedural validation consists of emergency response team members reviewing the BCCP to confirm basic procedures and discussing responsibilities for different failure scenarios to ensure adequate staffing.

³⁰ According to HCFA, simulation consists of emergency response team role playing from alternate facilities with minimal test scripts, while operational validation is used to evaluate the most complex and critical BCCPs under full or partial operating conditions using detailed scripts.

validation activities are essential to ensuring that BCCPs can be executed in the event of Y2K-induced failures.

The status of Medicare contractor BCCPs is unknown. In May 1999, HCFA reviewed 77³¹ contractor plans and concluded that 17 of these required major improvement. However, HCFA's BCCP technical support contractor stated that not all Medicare contractors have specified detailed procedures that are required for executing and testing BCCPs. Our assessment of these plans is consistent with the technical support contractor—HCFA does not yet have the detailed plans from most contractors.

To address this situation, HCFA issued a memorandum on August 6, 1999, instructing Medicare contractors to have available detailed BCCPs for HCFA review by September 30. HCFA plans to review these at each of the contractor's site using agency Y2K contractor oversight teams. To prepare these teams for this review, HCFA's technical assistance contractor recently provided training to them, along with checklists, that will be used to assess the adequacy of Medicare contractor BCCPs. On September 24, 1999, HCFA officials told us that these assessments are to be completed by October 30, 1999. We remain concerned about the late completion dates associated with these plans and whether there will be sufficient time remaining to test them.

The status of MCO BCCPs is likewise not encouraging. HCFA required MCOs participating in the Medicare program to submit their plans to HCFA by July 15, 1999.

³¹ Some contractors submitted more than one BCCP.

As of September 2, 1999, HCFA had received BCCPs covering 310 of the 383 MCOs. HCFA's review of these 310 concluded that 69 percent of them need major improvement, 18 percent need minor improvement, and 13 percent were reasonable.

HCFA has been active in following up on the MCO BCCPs. For example, it mailed letters to each of the 73 that have not yet submitted plans. In addition, it sent letters to those MCOs with plan deficiencies and has requested that those plans in the "needs major improvement" category be resubmitted by September 28. In addition, HCFA has held three workshops--in Los Angeles, Denver, and Atlanta--to assist MCOs in developing BCCPs. HCFA officials told us they have requested that the MCOs validate their plans by the end of November, but they could not provide documentation to us to substantiate this request.

Limited time remains to complete and validate all BCCPs. Therefore, it is essential that HCFA sustain its efforts to validate all internal plans and closely monitor the completion and validation of contractor and MCO plans.

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In summary, HCFA and its contractors have made progress in addressing Medicare Y2K issues. However, until HCFA completes the ongoing recertification tests, the final status of the agency's Y2K compliance will remain unknown. Limited time remains to

completely test all systems that process Medicare claims for Y2K compliance (internal, fee-for-service contractor, managed care organization, and provider). Nevertheless, HCFA must sustain its efforts, because any progress made in testing these many systems lowers the risk of disruptions to Medicare and the claims payment process. HCFA must also continue to closely monitor contractor testing with providers that to date has been limited but has uncovered Y2K problems. In addition, HCFA needs to continue its efforts to ensure that MCOs are adequately addressing their Y2K challenges. Given the considerable amount of work that remains in the next few months, it is crucial that the development and testing of internal, contractor, and MCO business continuity and contingency plans move forward rapidly to ensure that, no matter what, providers will be paid and beneficiaries will receive care. This concludes my statement, and I would be pleased to respond to any questions at this time.

Contact and Acknowledgments

For information about this testimony, please contact Joel Willemsen at (202) 512-6253 or by e-mail at willemsenj.aimd@gao.gov. Individuals making key contributions to this testimony included Dr. Nabajyoti Barkakati, Christina Bower, Mary Dorsey, Dr. Robert Norris, and Dave Powner.

(511797)

Mr. HORN. We now go to the principal witness from the Health Care Financing Administration, which is the Chief Information Officer Gary Christoph. Dr. Christoph.

STATEMENT OF GARY CHRISTOPH, PH.D., CHIEF INFORMATION OFFICER, HEALTH CARE FINANCING ADMINISTRATION

Dr. CHRISTOPH. Chairman Horn, Chairwoman Morella and Congressman Turner, thank you for inviting me here today to discuss the Health Care Financing Administration progress on meeting the year 2000 challenge. I'm happy to report to you that we continue to make solid progress.

We have continued our aggressive Y2K activities since we last came before Chairman Horn's committee this past April, and we are on track toward meeting this challenge successfully. All of our internal systems have been renovated, fully tested, certified compliant and implemented. All of our external claims processing systems, those at our contractors, have been fully tested, including future date testing and integrated testing and certified as compliant; and all of these systems are in production and are processing Medicare claims today.

We've taken the advice of Congress to heart and have worked diligently with the GAO to achieve our mutual goal that Medicare function into the new millennium with minimal disruption due to Y2K. For all of us in the health care industry, the year 2000 challenge is more than a business and technical issue. It is a patient care issue. As the GAO has reported, provider readiness surveys have had very low response rates and consist of self-reported status information that we suspect of being overly optimistic.

We continue to have serious concerns about the readiness of Medicare providers. We have made extraordinary efforts to reach out to providers and to raise awareness about what they must do to meet their responsibility. We are sponsoring hundreds of conferences, learning sessions, and lectures throughout the country, and we meet regularly with the health care sector trade groups to raise awareness.

We have established a Y2K website, a toll-free line to provide up-to-date information on a wide range of issues, and we have made other steps to help readiness.

We are encouraging providers to test future-dated claims with our claims processing contractors.

Despite these unprecedented efforts, too few providers are taking advantage of the opportunity we've created for them to test with us. We're doing all we can to ensure that our systems will work and that providers will get paid. That's the best way to ensure that beneficiaries continue to get care, and we've pulled out all the stops to encourage providers to get ready, too, but it is frustrating that they are still not willing or able to test with us.

In fact, less than 2 percent of claim submitters have tested with our contractors. Of those that have tested, 10 to 20 percent have found errors. Those that have found problems have been able to correct them. That's the purpose of the testing. That's the good news.

We remain deeply concerned, however, about those who have not tested at all. If they have not tested, it is unlikely if they know

whether or not their systems will work. We are doing all we can to raise providers awareness, and we are very open to your advice and suggestions on how best to reach them in the limited time that remains.

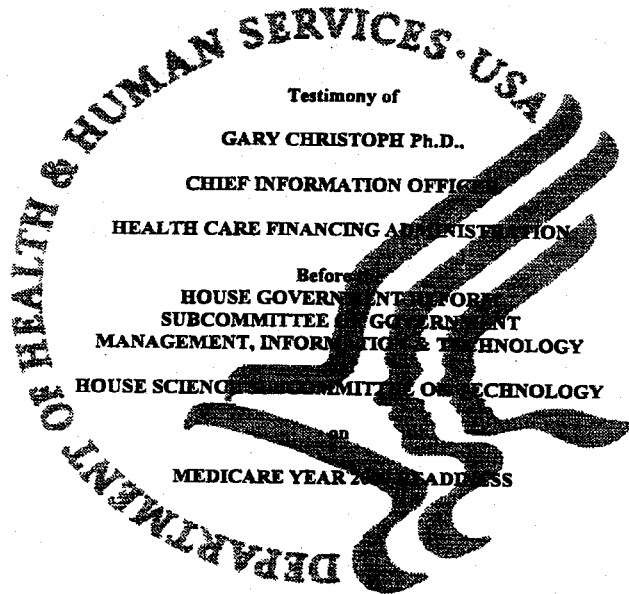
We at HCFA have and continue to do a great deal of testing and retesting to ensure that our own systems will continue operating come January 1st, 2000. We continue to refine and validate our contingency plans which were developed using GAO guidance to prepare for any unforeseen glitches. We've actually exercised some parts of our plans successfully during Hurricane Floyd several weeks ago. We have also required our claim processing contractors to have appropriate and validated contingency plans, and we're carefully reviewing those plans, as GAO has recommended. And we continue to help health care, managed care organizations and State Medicaid plans and the health community at large to develop and refine their contingency plans.

We have had a lot of help with our Y2K effort. We appreciate and have greatly benefited from the advice of our independent validation and verification contractor, AverStar, as well as advice from the Health and Human Services Inspector General and the General Accounting Office. And we certainly would not have made the progress we have without the support and funding that has been provided to us by you, Congress. I am confident that our systems will be ready to process and pay claims at the turn of the century. We will continue to do all we can to reach out to providers and to share information and assistance.

Again, I thank you for your attention to this essential issue. Thank you, Mr. Chairman.

Mr. HORN. Thank you very much.

[The prepared statement of Dr. Christoph follows:]



September 27, 1999



Testimony of
GARY CHRISTOPH, Ph.D., CHIEF INFORMATION OFFICER
HEALTH CARE FINANCING ADMINISTRATION
on HCFA Y2K PROGRESS before the
HOUSE COMMITTEE ON GOVERNMENT REFORM
SUBCOMMITTEE ON GOVERNMENT MANAGEMENT,
INFORMATION, & TECHNOLOGY
and
HOUSE COMMITTEE ON SCIENCE
SUBCOMMITTEE ON TECHNOLOGY
September 27, 1999

Chairman Horn, Chairwoman Morella, Congressman Turner, Congressman Barcia, distinguished Subcommittee members thank you for inviting me here today to discuss the Health Care Financing Administration's (HCFA) progress in meeting the Year 2000 (Y2K) challenge. I am happy to report today that HCFA continues to make solid progress.

Y2K remains our Agency's top priority, and we are on track to meeting the Year 2000 challenge successfully. We have continued our aggressive Year 2000 activities since we last came before the Government Management, Information, & Technology Subcommittee this past April. Our success is due in large part to the leadership of these Committees and Congress, as well as to the commitment and dedication of our Administrator, Nancy-Ann DeParle. Clearly, we would not be where we are today without the help and resources you have provided.

My testimony today will focus on two main issues. First, where we are in our Year 2000 effort and second, where we see the greatest risk to our programs, which comes from areas outside our direct control, namely the uncertain readiness of Medicare providers.

Medicare Systems Readiness

As we reported last April, all of HCFA's internal systems were renovated, fully tested, certified compliant, and implemented by the government-wide Year 2000 goal of March 31, 1999. This includes the systems that manage the eligibility, enrollment, and premium information of Medicare beneficiaries, and those that make payments to managed care organizations that contract with HCFA. In addition, all of the external claims processing systems, those operated by private

insurance contractors that process Medicare fee-for service claims and pay bills, have been fully-tested, including future-date tested, and certified as compliant. All of these systems are in production and are processing and paying Medicare claims today. Our independent verification and validation (IV&V) contractor, with oversight from the Department's Inspector General, has verified the readiness of these external systems. Last April, you urged us and the GAO to work together to achieve our common goal of having Medicare continue to function with minimal disruption because of Year 2000 issues. We have taken your advice to heart and have worked diligently with the GAO to assure that Medicare's core business activities will continue to operate effectively into the new millennium. We appreciate the General Accounting Office's (GAO) continuing oversight of our efforts; they have provided us with valuable independent perspective.

The GAO has highlighted several areas where we could improve our efforts and we are acting on each of them. For example, we are using software tools to improve our test coverage and execution. We have imposed a moratorium on system changes through March 31, 2000. We have begun monitoring provider testing of electronic claims submissions. We have increased our efforts to determine the readiness status of Medicare managed care organizations (MCOs). We are successfully managing contractor and data center transitions. And we continue to pay close attention to Medicare contractor and MCO business continuity and contingency plans.

Testing

We have developed and implemented a process for performing Year 2000 renovations, certification testing, and validation which ensures our work is of the highest quality and that our systems will be Year 2000-ready by January 1, 2000. Our IV&V contractor, AverStar, has characterized some of the steps we have developed as "best practices" that they have recommended to their other Year 2000 customers.

We have closely followed and even exceeded the GAO's recommendations in the design and performance of our testing regimen. These activities have included:

- Unit testing to provide evidence that the smallest defined feature of a particular piece of

- software works as it was intended.
- Integration testing to verify that various units of software, when combined with other units, work together as expected.
 - End-to-end testing to ensure that a defined set of interrelated systems, which collectively support HCFA-controlled core business functions, work in combination as intended in a fully operational environment. This includes integrated testing of contractor systems with the Common Working File (CWF).
 - Employing validation tools to certify the quality of code renovation.
 - Future-date testing of all Medicare fee-for-service systems in a future-date environment.
 - Independent testing of Medicare contractors' standard systems.

We are now completing recertification testing to re-verify that our systems are working and that software changes made this past summer to fulfill legislative mandates and improve program operations have not affected previously achieved Year 2000 compliance. This recertification testing is being done on all of our external systems and those internal systems that have undergone any significant change. We will complete our recertifications by November. These extensive tests will provide further assurance that all of our systems will function in the new millennium so that there will be no disruption in payments to providers.

Acting on the advice of the GAO and using what we learned in our first round of testing and recertification, our recertification testing surpasses our previous tests in both its sophistication and scope. I am convinced that our systems will be ready for the millennium and, frankly, believe that our testing has put our systems in better shape than ever before. Our IV&V contractor is working closely with us on our recertification effort. We are taking steps to quickly address any concerns highlighted by their evaluations. Their independent reviews are central to our recertification effort and provide us with a key Year 2000 management tool to help us better target our resources in the limited time remaining.

Contingency and Day One Planning

Risk mitigation is essential to our Year 2000 contingency planning effort, which we have largely based on the GAO published guidance on contingency planning. While we believe the risk of Year 2000 failures of our systems is low, we are working diligently to prepare for any potential failures. Following the GAO's recommendations, we assembled our own handbook on contingency planning and made it available to our contractors, states, managed care organizations, and the provider community. This handbook goes beyond the GAO's recommendation for the level of detail necessary for successful contingency planning. We and our claims processing contractors have adhered to our more stringent standards, and we have urged states and Medicare MCOs to follow them as well.

We are now in the validation phase of our own internal contingency planning process. Each contingency plan has a designated Emergency Response Team responsible for executing the various plans, if necessary. During the validation phase, these teams are running practice exercises and rehearsing plans in a simulated environment.

We have required that our claims processing contractors have appropriate and validated contingency plans in place. We are carefully reviewing these contingency plans on-site at the contractors and have invited the GAO to accompany us on these visits. And we continue to assist our partners, including managed care organizations, state Medicaid plans, and the health care provider community at large, as they develop and validate their own contingency plans.

As part of our overall preparedness strategy, we have in place our new command and control structure to proactively assess the status of all of our systems and partners during the millennium transition, and, as necessary, guide our reaction and management of any unforeseen Year 2000 events. This new structure permits us to track the status of our health care programs; organizes our decision-making processes for identifying and resolving problems so as to better recognize trigger events; and reports on the status of all of our programs, including mission-critical system operations and business continuity functions.

While these Day One and contingency plans are important risk mitigation efforts, we have already passed significant Year 2000 milestones which provide real-time evidence that our remediation efforts have been successful and that our systems can function in an actual Year 2000 environment. In August, we successfully received and processed enrollments from the Social Security Administration for beneficiaries who will be newly entitled to Medicare on January 1, 2000.

Outreach

We now see our greatest risk to the program as the uncertainties in the readiness of our partners, namely, our Medicare providers. As the GAO has noted, virtually all of the surveys of provider readiness have fairly low response rates, and the anonymous responses are self-reported data, which may be overly optimistic. While we suspect that larger organizations are in better shape, we are concerned about the readiness of individual providers in rural and inner-city institutions. Accordingly, our biggest risk mitigation effort is an unprecedented outreach campaign to health care providers and their trade associations to raise awareness of the need to make Year 2000 systems changes. We continue to have serious, ongoing concerns about the ability of some Medicare providers to successfully meet this challenge. To address these concerns and to encourage providers to renovate and test their systems, we have engaged in an unprecedented series of outreach activities, including:

- Sending two separate mailings to each of our more than 1.1 million Medicare providers and health plans stressing the importance of Year 2000 readiness, including the need to assess readiness, test systems, and develop business continuity and contingency plans.
- Sponsoring full-day conferences and half-day public learning sessions for health care providers in every state urging assessment, remediation, claims testing, and contingency planning.
- Participating in the production of a Year 2000 Health Network satellite broadcast and

Audio Digest taping for distribution in continuing education materials to physicians nationwide.

- ▶ Distributing over 1,800 CD-rom based Year 2000 "Jump Start Kits" to health care providers. These kits assist small businesses in assessing their areas of Year 2000 risk and formulating contingency plans.
- ▶ Developing a "Year 2000 Outreach Survival Kit" for Medicare contractors, which includes fact sheets, talking points, web resources, and a provider inventory checklist.
- ▶ Creating a website dedicated to the Year 2000 (www.hcfa.gov/y2k) advising providers with up-to-date information on how to identify mission-critical hardware and software and assess its readiness; test systems and their interfaces; and develop contingency plans should unexpected problems arise. The website includes links to other relevant sites, such as the Food and Drug Administration's website on medical device readiness.
- ▶ Establishing a Year 2000 toll-free phone line, 1-800-958-HCFA (1-800-958-4232) where providers can receive current information and answers to Year 2000 questions that relate to medical supplies, their own facilities and business operations, and, if necessary, referrals for more specific billing-related information. The hotline also updates callers on HCFA's Year 2000 policies and provides general "how to" assistance to help callers prepare their own computer systems for the millennium.
- ▶ Hosting a number of Year 2000 seminars and provider educational conferences in cities across the country to provide attendees with insights about what doctors' offices, hospitals, equipment suppliers, pharmacies, and other health care providers, and their billing agents need to do to be Year 2000-ready, including readiness strategies as well as information about biomedical equipment and pharmaceutical risks.

- Working in consultation with rural provider associations to hold smaller, more individualized Year 2000 educational sessions targeted towards rural providers.
- Participating in and sponsoring hundreds of conferences, symposiums, and outreach programs through our own Year 2000 speakers bureau.
- And working with Congress to encourage providers to understand the importance of the Year 2000 issue.

Despite these unprecedented efforts, we remain deeply concerned that many providers still do not appear to be doing all that they must to prepare for the Year 2000. As the millennium deadline approaches, we are, therefore, refining and re-targeting our outreach toward those provider groups we and others have identified as needing the most attention. And we are interested in working with the Congress and pursuing any ideas you might have as to how best to reach these providers.

As part of this re-targeted effort, we are placing special emphasis on reaching out to the larger billing companies and clearinghouses that many of our provider partners use to submit Medicare claims to our claims processing contractors. We want to encourage these larger companies to test their ability to submit Year 2000-compliant claims to their contractors to ensure through testing that their remediation efforts have been successful.

Last Wednesday, here in Washington, we co-sponsored an all-day summit specifically designed for billing clearinghouses, third-party billing services, practice management companies, software vendors, and other claims processors. The summit provided information on the mission critical steps these partners need to take to continue processing claims successfully in the new millennium, as well as up-to-date information on best practices from individuals in the field, including claims processing contractors, billing service providers, and others.

Also, as part of our outreach strategy, we continue to strongly encourage health care providers to test future-dated claims with our claims processing contractors. Such testing will assist them in determining whether they can successfully generate and submit future-dated claims to our contractors. Too few providers are taking advantage of the opportunity to submit test claims to our contractors. This typifies our concern: If submitters have not tested with us, it is likely they have not tested with other payers. If providers do not test, then they really do not know whether their claim submission will work. We are redoubling our efforts to encourage all of our partners and their billing agents to test their systems and ensure they will function in the new millennium.

Managed Care

We have been working diligently to address the Year 2000 readiness of Medicare managed care organizations (MCOs) as well. While our own internal systems for paying MCOs are compliant, we remain concerned about some MCOs' preparation for the Year 2000. We required all Medicare MCOs to certify to us that their systems will perform into the new millennium. We also required the Medicare MCOs to provide us with their contingency plans and we are reviewing those plans. Approximately two-thirds of the plans we have reviewed needed improvement. Our review of the contingency plans for national chains indicates that 50 percent are reasonable or in need of minor improvement, while the other 50 percent need major improvement.

We have required those MCOs whose plans need improvement to resubmit revised contingency plans to us. To assist MCOs in improving their plans, HCFA hosted three technical assistance workshops in Los Angeles, Denver, and Atlanta to provide guidance on contingency planning principles, as well as to respond to particular concerns. Through these workshops and other communications, we have endeavored to assist those MCOs with less-than-adequate plans in revising and strengthening their plans. And we will continue to monitor the progress of MCOs, paying particular attention to MCOs' contingency plan testing, for the remainder of the year.

Medicaid

We also have been working closely with our nation's Governors and state Medicaid Directors to ensure that state Medicaid agencies are ready for the Year 2000. We have undertaken an extensive effort to assess the Year 2000 readiness of state Medicaid agencies as well as provide technical assistance on compliance protocols, testing, contingency planning strategies, and best practice information. We have taken the extra step of hiring expert consultants who, through site visits, are assessing states' progress against their own goals and standards in becoming Year 2000 compliant, as well as providing detailed feedback and technical support. We have conducted site visits to every state and the District of Columbia and are continuing to assist those that are having particular difficulties, including providing technical support in developing and evaluating their contingency plans where needed. Based on observations obtained through our site visits, states have made substantial progress.

Conclusion

We have made remarkable progress in preparing our systems, the ones over which we have authority and can exert control, for the new millennium. We are continuing to test our systems and refine our contingency plans. We continue to rely on IV&V and to work with the GAO to continually improve our effectiveness and readiness. We remain concerned, however, about the progress of some Medicare providers in successfully meeting this challenge. We are committed to continuing our unprecedented efforts to reach out to these partners, share information, and provide technical assistance. We appreciate the support and attention of Congress and the GAO in this important endeavor. Again, I thank you for your attention to this essential issue, and I am happy to answer any questions you may have.

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Mr. HORN. We now have the president of the American College of Physicians and the American Society of Internal Medicine, Dr. Whitney W. Addington. Dr. Addington.

**STATEMENT OF WHITNEY W. ADDINGTON, M.D., PRESIDENT,
AMERICAN COLLEGE OF PHYSICIANS, AMERICAN SOCIETY
OF INTERNAL MEDICINE**

Dr. ADDINGTON. Thank you and good afternoon.

I am Dr. Whitney Addington. I am an internist and pulmonologist in Chicago and president of the American College of Physicians American Society of Internal Medicine. The college is the Nation's largest medical specialty organization. Many of the more than 115,000 members of the college are involved in internal medicine practices in which they constantly rely on computer technology which provides invaluable assistance in the provision of patient care, as well as in the administrative aspects of running their medical practice. You are to be commended for the subcommittee's ongoing focus on the serious challenges posed by Y2K readiness issues.

ACP-ASIM was quick to recognize the threat posed by Y2K. Unless our members addressed it, we knew it could disrupt their practice operations and thereby impede delivery of vital health care services to their patients. As early as March 1998, our monthly newsletter ran a full-length article posing the question, "Is your practice prepared for the millennium bug?"

Early in 1999, the college mobilized a college-wide information campaign to alert, inform and assist our membership in addressing the Y2K threat. Articles appeared in most of this year's issues. The topic has been further publicized through our State chapters.

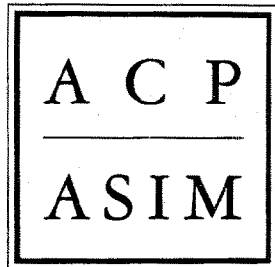
ACP-ASIM's Center for a Competitive Advantage created a special Y2K webpage on our own website, www.acponline.org, and published a Y2K Tool Kit to give members detailed, practical information and guidance on how to address the issue.

This is the Y2K Tool Kit that has been given to our members, and I have included a copy, together with my testimony, and would respectfully request that it be included in the record of this hearing.

Mr. HORN. Without objection, it is so ordered at this point in the hearing.

Dr. ADDINGTON. Thank you.

[The Y2K Tool Kit follows:]



American College
of Physicians

American Society
of Internal Medicine

Y2K TOOLKIT

Product # 410100190

Y2K

TOOLKIT

Introduction – How to Use This Toolkit

Y2K Basic Information, Strategy, and Resources.....	Tab 1
Immediate Actions To Take.....	Tab 2
Medical Practice Computer System Compliance.....	Tab 3
Medical Devices Compliance.....	Tab 4
Support Systems and Outside Vendors Compliance.....	Tab 5
Selecting A Software System Information Packet.....	Tab 6

How to use this Toolkit

This guide provides information and resources for addressing each of the major problem areas of the Year 2000 computer problem (Y2K).

However, time is now running out. Priorities must be set and immediate action taken. To use this guide efficiently, go first to Tab 1 (Y2K Basic Information, Strategy, and Resources); read at least the "basic strategy" and whatever other information meets your needs. Then go to Tab 2 (Immediate Actions To Take), which will get you started and lead to the other three topics (Compliance for medical practice computer systems, medical devices and support systems or outside vendors) as appropriate. If you determine that your computer system can not become Y2K compliant, you will be directed to Tab 6 to immediately begin looking for a new computer system.

***Please Note**

While the guidance presented in this guide was carefully chosen to assist our members in dealing with the Y2K problem, ACP-ASIM assumes no legal responsibility for decisions made by medical practices based on this information.

**Y2K BASIC INFORMATION, STRATEGY,
AND RESOURCES**

Basic Information, Strategy, and Resources

- 1-1 What is the Year 2000 problem?
- 1-2 A basic strategy for addressing the Y2K problem

Background Articles

- 1- 4 "Will the Y2K bug force you to replace your computer?"
ACP-ASIM Observer, March 1999
- 1- 7 "Is your practice prepared for Y2K?"
ACP-ASIM Observer, April 1999
- 1- 17 "Biomedical Equipment Crisis in the Year 2000"
Annals of Internal Medicine November 15, 1998
- 1- 18 "Is your practice prepared for the millennium bug?"
ACP-ASIM Observer, May 1998

Web Links and Other Resources

- HCFA toll-free Y2K telephone line: (800) 958-4232
This Telephone number will connect you with a HCFA Y2K expert and answer Y2K questions regarding medical supplies, Medicare billing and other issues.
 - HCFA Y2K Webpage – www.hcfa.gov/y2k/
 - Year 2000 Information Center – www.year2000.com
 - Small Business Administration – www.sba.gov/y2k/ or (800) 827-5722.
 - "The Year 2000 Problem: Guidelines for protecting your patients and practice" This guide was produced by the American Medical Association and can be accessed by ACP-ASIM Members at: <http://www.acponline.org/private/y2k/anamanue.pdf>
- 1 – 20 Possible Sources for Seminars on Y2K

What is the Year 2000 problem?

Originally many computer systems were designed to use only six digits, instead of eight, to record the month, day, and year. This pattern continued in the computer industry until very recently. Consequently, many computers and information systems are programmed to recognize the date "01-01-00" not as January 1, 2000, but as January 1, 1900. If they are not converted or updated, these systems will fail when the year 2000 arrives. "Failure" can take many forms, most of them unpredictable. Not only can the system give false results, but in many cases it can become so confused that it will simply shut down and lock up.

Because computers control a wide variety of equipment, from elevators and phone systems to medical devices, Y2K failures can be both highly disruptive and potentially dangerous. (Computer chips are also embedded in many otherwise mechanical devices, which can easily be overlooked in identifying items that need to be Y2K compliant.)

A basic strategy for addressing the Y2k problem

Because time is now very short and your practice has so much at stake, it is extremely important that you attack this problem strategically, focusing first on those items likely to have the greatest impact on your practice and subsequently on as many others as time permits. There are six basic steps to follow:

1. **Awareness:** Learn how systems can be affected so that you will be able to judge which of yours are potentially Y2K vulnerable.
2. **Priority setting:** Establish the priority order for investigating your potentially vulnerable systems, starting with the ones that are most crucial to your practice. Do not let the investigation of critical systems be put off until later while your practice gets bogged down working through a long list of relatively low risk support equipment.
3. **Assessment:** Determine the readiness of any system affecting your practice to operate in the new millennium. Investigate them in priority order. As appropriate, test them or obtain formal certifications of Y2K compliance from outside vendors or data exchange partners.
4. **Corrective action:** If any equipment or systems in your practice are found to be non-compliant, follow the three "R's": *Repair, Replace or Retire*. *Repair* may be the cheapest and fastest solution, but Y2K retrofits are not available in all cases, nor reasonably priced. *Replacement* can give you the added benefit of also updating your system; however, at this late stage, you must be absolutely certain that the installation and all data conversion, staff training, and testing can still be accomplished before the end of the year. *Retiring* a non-essential system or equipment item still requires backing up and storing on a Y2K compliant system any related data that may need to be retrieved after 1/1/00.
5. **Testing:** Do not rely on assurances. Have all of your existing, new, and repaired systems fully tested to make certain that they actually work.
6. **Contingency planning:** Decide what to do if something goes wrong in the year 2000, despite your best efforts, e.g. if you are unable to correct all items on your Y2K check list in time, or some corrections do not work as expected, or external events uncontrollably impact your practice. Take steps now to anticipate such contingencies. Plan what you will do to keep your practice operational if Y2K failures occur. Focus on things that would be most troublesome for you and your patients.

Background

Articles

ACP-ASIM Observer

Will the Y2K bug force you to replace your computer?

Tips to determine how the year 2000 problem will affect your practice's ability to conduct business

From the March 1999 *ACP-ASIM Observer*, copyright © 1999 by the American College of Physicians-American Society of Internal Medicine.
By Carl Cunningham, MBA

If you haven't prepared your practice to handle the year 2000 computer problem, you now have two things to worry about: not only is there a chance that you have to replace, rather than fix, your computer system, but time to do so is running out.

While the problem, frequently referred to as the Y2K or millennium bug, is expected to affect computing devices throughout health care, it will hit physicians the hardest by crippling practice management software. If you think that the worst thing the Y2K bug can do is cause your bills to go out misprinted "Jan. 1, 1900" instead of "Jan. 1, 2000," think again. Experts say that when a computer reads "1/1/00" as "Jan. 1, 1900," it could get confused, shut down and possibly even refuse to reboot.

At that point, with no access to your accounts receivable, how will you bill your patients and third-party payers, or even know which payers owe you? Without access to patient schedules, how will you know which patients are coming to see you the next day and what slots are available for future scheduling? Obviously, your cash flow and office operations could be seriously disrupted.

If you don't already know whether your existing practice management system can be made Y2K compliant, call your vendor. If you have minimized your practice's expenses by retaining an older computer system and/or by deferring the purchase of software upgrades, your system may not be Y2K compliant. Recognize that as late as 1997, a number of vendors were still selling expensive software that was not Y2K compliant. Physicians have taken at least two of these vendors to court to address the problem.

If your vendor can supply you with a "patch" to fix the Y2K problem, order one right away. Backlogs for these retrofits could develop by midyear as practices rush to get them. Some vendors are exploiting this situation by charging thousands of dollars for Y2K compliance packages. Worse yet, there may not be Y2K compliance retrofits available for many older systems, whose original developers have gone out of business or been acquired by large national firms that don't want to support older products.

If you own one of these phased-out "legacy" systems, you may have to replace your hardware as well as your practice management software. Even if you can fix your existing system, it may be more cost effective to buy a modern system that gives you greater functionality.

Unfortunately, time is quickly running out to make such a complex purchase. With literally hundreds of systems to choose from and a flood of end-of-the-millennium orders, it will probably take longer than the

usual six to nine months to select and install a new computer system. As a result, the longer you wait to start the selection process, the greater the risk that the vendor you pick will be too busy to install your system before Jan. 1, 2000. Some analysts predict that backlogs for new systems will start to develop this spring, so you should start your search immediately.

Smaller practices may be able to opt for "off-the-shelf" products that you can use to replace your existing system. These low-end products typically sell for less than \$2,000, but they offer only bare-bones features and very basic billing and scheduling functions. That may be enough for small practices, however. These products may also prove to be the best—or only—option if vendors of high-end products can't deliver before Jan. 1, 2000.

The College can also help. Over the last year, articles about how to cope with the Y2K problem have appeared in both the *ACP-ASIM Observer* and *Today's Internist*, and another comprehensive article is planned for the next issue of *ACP-ASIM Observer*. (Go to ACP-ASIM Online at www.acponline.org for back articles from either publication.) In addition, the College's Center for a Competitive Advantage has developed an information packet, "Selecting a Software System," which is available on the College's Web site and through ACP-ASIM Customer Service (800-523-1546, ext. 2600, or 215-351-2600, 9 a.m. to 5 p.m., EST).

The College is also developing new guides, checklists and scorecards to help members evaluate, compare and select Y2K-compliant practice management and electronic medical records software. Look for these and other tools on ACP-ASIM Online in the "Computers in Medicine" section. Finally, members can call the College's Medical Informatics Department (800-523-1546, ext. 2572) for more information about Y2K compliance issues and the Center for a Competitive Advantage (800-338-2746, ext. 4553) for information about purchasing a computer system.

Carl Cunningham, MBA, is Director of the College's Center for a Competitive Advantage.

Government to doctors: time to get office systems Y2K compliant

The federal government is turning up the heat to encourage physicians to make their office systems Y2K compliant.

As part of its Y2K efforts, HCFA has instructed its Medicare carriers to reject electronic claims that do not use a four-digit number to indicate the year beginning April 5, 1999. In a Jan. 13 letter, HCFA directed its carriers to return to provide claims that use the older two-digit format. Computer systems can misunderstand two-digit dates on claims that describe years beyond 1999; that confusion is the heart of the Y2K problem.

Based on its current experience, HCFA believes that the restriction will immediately affect only a small percentage of Part B claims. Many physicians submit their claims through clearinghouses or other

electronic intermediaries, which already correct date formats. College officials are concerned, however, that physicians getting help from these services may mistakenly believe that their systems are Y2K compliant because HCFA and other payers are able to process their claims. The problem is that these services will be unable to work with physicians using non-Y2K compliant systems starting Jan. 1, 2000. HCFA had previously said that it would require claims to be Y2K compliant by Jan. 1 of this year but then extended its deadline to give providers more time to prepare. For more information about the change, contact your Medicare carrier.

In another year 2000 development, the government will hold its second "Y2K Action Week" March 28 through April 3. The goal of the event is to raise public awareness about Y2K issues and to alert community organizations to prepare their systems for the new millennium. The week will focus attention on institutions and organizations in 25 different business sectors ranging from banking to food service to health care. During the week, members of the press in local communities are expected to talk to members of these industries, including physicians, about their plans for dealing with Y2K issues.

HCFA officials are encouraging physicians to prepare to answer questions that reporters and patients may ask. Officials say that physicians should be able to answer detailed questions about how they have prepared their office systems—including computerized records systems, billing systems and appointment scheduling systems—to handle year 2000 problems.

Is your practice prepared for Y2K?

If you're not ready by July, experts say that it may be too late

From the April 1999 *ACP-ASIM Observer*, copyright 1999 by the American College of Physicians-American Society of Internal Medicine.

By Edward Martin

When Mason City Clinic in northern Iowa began having problems scheduling routine examinations for its oldest patients several years ago, few realized that the confusion was an omen of the technological trouble soon to follow.

Because the clinic's computerized scheduling software uses only two digits to record patient birth dates, a patient born in 1895 would be listed as being born in '95. The computer software assumed that the patient had been born in 1995--and scheduled pediatric exams for the clinic's centenarian patients.

The glitch was an early example of what has come to be known as the year 2000--or Y2K--bug, in which computer programs that abbreviate dates to two digits are expected to fail in the new millennium. As the clinic's physicians and administrators discovered, incorrect birth dates were just the tip of the iceberg.

"Among other things, we found that the city's municipal computers that monitor and control levels in the water tower that supplies us hadn't been made compliant," said Hal Hawkos, vice president for information systems at North Iowa Mercy Medical Center, which owns the clinic, a 350-bed hospital and 40 other clinics. Although remote, he said, "That raised the possibility that even our water supply could fail in January."

As the new century approaches, physicians and health care organizations around the country are trying to prevent worst-case scenarios where computers shut down critical biomedical equipment, cause elevators to freeze and disrupt power and communications. While experts say that such situations are unlikely, there is serious concern about the health care industry's ability to prepare for technological problems.

According to a recent report from the Senate Special Committee on the Year 2000 Technology Problem, health care is the least prepared to deal with Y2K problems. The report noted that only about 60% of hospitals were planning to test their Y2K fixes before the new year, making them vulnerable to any glitches that these fixes may cause.

But the Senate report contained an even more disturbing statistic: About 90% of physicians are completely unaware of how their offices may be affected by Y2K problems. In an industry that appears ill prepared to deal with Y2K issues, physicians rank dead last.

Shifting fears

As recently as a year ago, much of the alarm about Y2K problems concerned infusion equipment, ventilators, defibrillators and other devices with date-sensitive computer chips that can seriously affect patient care. Experts fear that computers that cannot handle a change in date will freeze and simply stop working, causing havoc.

But the other part of the problem is that in health care, even seemingly innocuous glitches like wrong birth dates can have serious consequences. "In sophisticated monitoring systems, dosages are based on calculations that include age," said Donald J. Palmisano, MD, a New Orleans surgeon who heads the AMA's year 2000 initiatives. "If you didn't override that, you could be giving pediatric dosages to someone 100 years old."

With large health care organizations spending millions to address Y2K problems, some of those concerns are slowly abating. "There was a lot of doom and gloom about medical equipment, but we found most things worked just fine," said Mr. Hawkos from North Iowa Mercy. "There might be a few of what we call 'workarounds,' such as printouts that read '00' instead of '2000,' but that doesn't mean the equipment won't function properly."

Even large government agencies like HCFA say they will be ready for the new millennium. A year ago, many were predicting the Y2K problem would cause the collapse of the agency and its network of 78 outside contractors, which depend on computers to process physician payments. But by March, said HCFA spokesman Peter Ashkenz, 70% of those external systems had already been declared compliant, along with all of HCFA's 25 internal programs. "We will be ready on time," said Nancy-Ann DeParle, HCFA's administrator. "The question is, will doctors?"

For now, the answer seems to be a firm "no." Even before the latest report from the Senate committee, analysts had identified health care as an industry that was lagging behind in its Y2K efforts. Kenneth Kleinberg, health care research director at the Gartner Group Inc., an information technology research firm in Stamford, Conn., said that on a scale of one to five, industries like banking have largely completed Y2K preparations and are at a four or five. In surveys of the health care industry, however, he said that most physicians were in stage one or two of preparations, which meant they had not recognized the problem or even begun addressing it.

For physicians, a critical factor in addressing Y2K issues is cost. Even a solo practitioner with just a server and a few personal computer terminals might expect to pay \$15,000 to \$30,000 to update or acquire new practice-management programs and hardware. For larger practices, those costs can go much higher.

But analysts say that physicians who don't pay now will certainly pay later. That's because without a Y2K-compliant system, most physicians will be unable to bill payers and receive reimbursements.

Dr. Palmisano experienced just such a situation when his Medicare claims processor tried to update its computers for the year 2000.

A number of physicians in Louisiana and Arkansas found their cash flow disrupted for up to six weeks. "We had to scramble to cover payroll and purchase supplies," Dr. Palmisano said.

Similarly, Y2K problems can potentially cripple physicians financially, explained Nicollette Francey, MD, a Greenwich, Conn., internist whose firm, Corporate Wellness Management Inc., helps practices determine if vendors and others are ready. "This whole thing could turn out to be a small bump in the road, or a huge disaster," she said. "I'm concerned it could be the latter, particularly for practices under pressure from health maintenance organizations and struggling to survive."

The time factor

The costs of preparing for the year 2000 are only part of the puzzle facing physicians. Time--and the lack of it--may turn out to be physicians' biggest enemy in making office systems Y2K compliant.

Consider the schedule that large health care organizations are following. In Iowa, for example, Mr. Hawkos said that high-risk technology--EKGs and heart monitors, for example--will be corrected and tested by June. Medium-risk items vital to finances will be tested by September or October, and low-risk items such as fax machines that merely date documents may remain uncorrected.

Because they have fewer resources to throw at the problem, physicians should probably be somewhat ahead of that schedule. "Everything should be in place, tested and completed by July, and if not, you're in a danger zone," said Mr. Kleinberg from the Gartner Group.

The bad news is that if you have already delayed too long, full compliance may be impossible. "At this point, we're in the administrative equivalent of medical triage," added Phillip L. O'Neill, a trial lawyer who represents physicians at the Washington law firm of Jackson & Campbell.

Even if you can't reach full compliance, you still need to get started. For physicians in smaller organizations, experts say that a good starting point is hardware such as network servers, desktop computers, laptops and handheld devices like PalmPilot computers used to store patient charts for rounds.

Michael Mieux, Y2K project manager for Medic Computer Inc., a Raleigh, N.C., vendor of practice management software, said physicians should examine their computers' internal clocks. "Software won't run if you can't boot up," he said. BIOS, the basic input-output system that controls disk drives, carries dates that can crash computers. Mr. Mieux suggested downloading diagnostic programs from manufacturers' Internet sites to check your computer.

Some diagnostic tests can be simple, although experts emphasize that you should back up files and data in case you trigger a system crash. "Create a dummy charge for a date after the year 2000 and see what your system does with it," suggested Roger A. Hofford, MD, a pediatrician in Lynchburg, Va., who is on the technology committee of the Medical Society of Virginia.

A number of Web sites also suggest advancing your computer's internal clock to the year 2000 to gauge its readiness for the new millennium.

A number of experts, however, say this is a terrible idea. They warn that such a test can trigger a disastrous crash from which your computer may not be able to recover. It may be impossible to reset the machine's date once it has crashed, and if the computer is on a network, it could possibly damage other machines.

Keep in mind that not all hardware problems will occur in computers. Security alarms, heating and ventilating systems and components of telephone systems like private branch exchanges—known as PBXs—contain microchips with embedded dates.

Because not all problems will be limited to your office, an external checklist is equally critical. Check with oxygen, pharmaceutical and general medical suppliers to make sure that their systems are Y2K compliant. If an admitting hospital's compliance is in doubt, it might be prudent to arrange to admit patients to an alternate hospital.

The biggest threat

For most physicians, however, the biggest Y2K threat will come not from some outside system, but instead from their own practice management software. To determine your vulnerability, experts say, you and your practice managers should create a checklist of programs that handle functions like insurance processing, downloading data from medical devices, pharmacy inventories, plus staff scheduling, benefit and tax records.

When it comes to making your software Y2K compliant, there are three choices: completely replacing hardware and software; installing upgrades or "patches," special programs offered by software makers specifically for Y2K problems; or employing a consultant or programmer to tailor custom solutions.

The problem with the first option--a new system--is that it is costly. "An eight-doctor practice that has used the same practice-management and billing and accounts receivable system for five or six years might have to spend \$50,000 to \$100,000 for new hardware and software," said Rosemarie Nelson, a healthcare technology consultant with Health Care Data Systems Inc. in DeWitt, N.Y.

Time is another major hurdle in getting a new system before the new millennium. Physicians want to make sure they're getting the right system, but anyone just getting started will lack the time to be thorough. "They need to move ahead and not get caught in the paralysis of analysis," said Ms. Nelson. "You have to spend \$50,000, so you try so hard to do the right thing that you do nothing."

The second option, an upgrade or patch, is a good one if your vendor is making such tools available. In addition, upgrades might come at little or no cost if the program is relatively new and the doctor has a service agreement with the vendor.

Scott H. Stewart, ACP-ASIM Member, a general internist in Auburn, Maine, handles billing, accounting, receivables and internal payroll accounting with a practice package called Medicine PM. While the program isn't yet year 2000 compliant, his office staff is waiting for the vendor to create a fix sometime this spring.

Experts warn, however, that physicians who wait until the last minute for their vendor to come through may discover that no such product exists. "The doctor who feels that because he laid his money out and is paying a maintenance contract he's automatically covered is in for a rude awakening," noted Mr. Kleinberg.

Costs for these fixes vary and have led to a number of lawsuits. In one instance, physicians who paid dearly for new software from Medical Manager Inc. sued when they learned that they would have to pay to make the product Y2K compliant.

New Jersey obstetrician Robert Courtney, DO, said he paid \$20,000 for Medical Manager software in 1996 but then quickly learned that it was not year 2000 compliant. He and a group of 15,000 other physicians won a lawsuit alleging that Medical Manager used Y2K as a ploy to charge \$100 million for fixes.

Other physicians have found the third option—consultants—another source of help. John H. Sipple, FACP, a pulmonologist in Syracuse, N.Y., has used a program called DataEase to store patient summaries since 1984. To make sure that the software will continue to function in the new millennium, his group, Internist Associates of Central New York, contracted with Health Care Data to supervise its Y2K compliance.

Experts warn that as January approaches, the potential for price gouging will grow. Mr. Kleinberg said that consulting rates have already increased 50% between early 1997 and the end of 1998 as competition between banking, health care and other industries drove up demand. "Overall, \$100 an hour is not an unreasonable rate for consultants," Mr. Kleinberg said, noting that many programmers make two to three times that amount.

"Installing new hardware might take a week or two, and it could take another week to two weeks to replace practice management software, with total costs of \$500 to \$1,000 a day," Mr. Kleinberg said. "The whole process can run \$15,000 to \$20,000 for a small practice, not including the cost of hardware."

While the prices may seem prohibitive, most experts caution that any extensive Y2K compliance effort is best left to professionals. "If you have a small organization without an information systems manager, you probably shouldn't attempt to tackle the issue by yourself," Mr. Kleinberg said.

Contingency planning

No matter which option you choose, if you wait too long you might have to resort to a more basic approach. "That can mean going back to your old, manual world of scheduling books and paper claims," said Ms. Nelson from Health Care Data Systems.

In North Carolina, problems arose in 1998 when gastroenterologist Michael Gaspari, MD, one of 11 doctors at the Charlotte Clinic for Gastrointestinal and Liver Disease, attempted to schedule colonoscopies for the new millennium. "Our computer started saying, 'There's no such date,'" explained clinic manager Ellen Calloway.

- To deal with the problem, she set up a separate computer system until the clinic's Medic software was updated. The glitch was resolved and the clinic is now ready for the new century.

Procrastinators may find they have to resort to a similar solution: using generic business software and spreadsheets to run their offices. Such software generally goes for \$3,000 or less, can be installed quickly and will do a basic job of tracking payments and scheduling

appointment. Experts say, however, that physicians should not expect too much from these systems.

Finally, analysts say that not all Y2K contingency measures involve computers. Here is a sampling of strategies some experts suggest to prepare for year 2000 problems:

- By September, you should increase your available credit. "It is not uncommon for a third of a practice's money to come from the local Blue Cross plan and a third from Medicare. Can your practice survive a blip in their systems?" asked Ms. Nelson.
- Investigate backup power. Many practices already have uninterruptible power sources, and hospitals and some large clinics have permanent diesel generators for sustained operations in blackouts. Those systems are beyond the financial reach of most practices, but uninterruptible power systems for less than \$2,000 can maintain computers long enough to shut them down without data loss if power fails.
- Practices that don't already archive and store patient and financial records off site should begin. Before year end, Mr. O'Neill, the Washington attorney, recommended that physicians and employees check pension and 401 (k) statements for accuracy, and file their own paper copies. Administrators, if possible, should compile payroll, W-2 and other data before the end of December.
- Physicians should avoid scheduling vacations from late December through early January, and managers should arrange for on-call physicians to remain in a single location during the critical New Year's period, in case paging and other communications systems go down. Some hospitals plan to limit elective surgery, and physicians should take it upon themselves to avoid scheduling it.

The underlying message from experts, however, is simple: Physicians need to take action now, not later. "We're not striking a panic tone, but doctors should deal with this just like any other crisis," said Dr. Palmisano. "If patients come in bleeding, we do what's necessary to resuscitate them, stabilize them, find the cause and fix the problem. We should face Y2K just like any ill patient."

Making the Y2K diagnosis: Web sites and other resources

While most analysts recommend that physicians obtain outside help from consultants, there are a number of resources and diagnostic tests that you can use to gauge the extent of your Y2K problems.

Professional societies like ACP-ASIM offer a number of resources, and other nonprofit organizations have been created specifically to deal with Y2K issues. And if you're technically inclined, a number of vendor Web sites provide Y2K information on their hardware and software products.

Here is a list of some of the resources available to physicians:

- ACP-ASIM has a Y2K section on its Web page (www.acponline.org/y2k/index.html) that features an information packet on how to evaluate and select practice management and electronic records software. The site also offers a Y2K compliance tool kit with inquiry letters to send to vendors and software to test for Y2K problems.

In addition, the College will hold a Y2K workshop at this year's Annual Session. "The Year 2000 Problem: Preparing Your Practice's Information Systems" will give internists tips on how to minimize the impact of Y2K problems on their hardware and software. For more information, see the Annual Session final program.

- The AMA's Y2K home page (www.ama-assn.org/not-mo/y2k/index.htm) offers articles about year 2000 issues, a list of frequently asked questions and suggestions for detecting compliance problems. Much of the material is available to members only.
- The FDA's site (www.fda.gov/cdrh/yr2000/year2000.html) offers detailed information the compliance status of all kinds of biomedical devices.
- The CDC (www.cdc.gov/y2k/y2khome.htm) contains general information on Y2K issues and details about its own compliance activities.
- HCFA (www.hcfa.gov/y2k/default.htm) contains information on how Y2K issues will affect Medicare and Medicaid patients and providers.
- Microsoft Year 2000 Readiness Disclosure & Resource Center (www.microsoft.com/ithome/topics/year2k/default.htm) offers a newsgroup to talk about Y2K issues and lists of Microsoft year 2000 products and resources.
- Rx2000 (www.rx2000.org) is a Minnesota-based nonprofit group developing solutions to Y2K issues. Its Web site offers a schedule of its seminars, as well as a discussion group, articles, links to other sources and a speaker's bureau.
- Greenwich Mean Time (www.gmt-2000.com/) sells tools to detect and diagnose Y2K problems on PCs. The site also sells educational videotapes on the topic.

- Year 2000 (www.year2000.com) offers a collection of news articles and links to Y2K consultants and vendors.

Limiting your liability for year 2000 mishaps

While the year 2000 problem is widely viewed as a technology issue, physicians should also consider it a serious liability concern. If patients are harmed by a Y2K mishap, experts say, they will likely come after you for damages. Here are some safeguards.

Donald J. Palmisano, MD, an AMA trustee who is heading the organization's year 2000 initiatives, said that a good place to start is to contact your malpractice insurers. Ask if their policies cover you if patients are injured by a Y2K failure. Many policies consider Y2K as an avoidable threat, not an accident, and don't cover Y2K-related problems.

Dr. Palmisano cited several examples from more than 450 software-based equipment failures since 1986 as types of problems that might become more likely when the new year arrives: He pointed to one instance in which a radiation therapy machine gave excessive dosages to six patients, resulting in three deaths. Other more common technological glitches include heart monitor breakdowns and ventilators that cause comatose patients to take too many breaths.

In many of these instances, everyone including doctors, vendors, equipment makers and maintenance companies were dragged into lawsuits. "Doctors could bear the brunt of Y2K liability," Dr. Palmisano added. "People filing claims will look for deep pockets and attempt to get as many people as possible involved."

For that reason, Dr. Palmisano said, the AMA has been fighting an attempt in Congress by biomedical equipment makers to limit their liability in exchange for divulging problems with their equipment. Several legal sources noted that physicians, as owners and end-users of equipment, are likely to be held ultimately responsible for its proper and safe use.

To protect yourself, experts say, you should keep detailed records. "It's important to document all inquiries to software and equipment makers, vendors, suppliers, utility companies and everyone else," said Phillip L. O'Neill, health care attorney with the Washington, D.C., law firm of Jackson & Campbell. "This can be as simple as writing a letter, or at least keeping a log of telephone conversations with names and dates. It's true that an office manager can testify, but human memory can be a frail thing."

Finally, there is an even more basic reason to document your Y2K compliance efforts. Corporations, hospitals, health plans and others will increasingly refuse to do business with practices that can't certify compliance.

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Biomedical Equipment Crisis in the Year 2000?

Annals of Internal Medicine

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An Internet resource providing information about the impact of the "Year 2000 Problem" on biomedical equipment has been established by the U.S. Food and Drug Administration (FDA): <http://www.fda.gov/cdrh/yr2000/year2000.html>

The Year 2000 Problem, or "millennium bug," occurs in computer operating systems and applications software whose designers conserved storage space by eliminating the first two digits of the year when encoding date information. Authors of these programs did not expect that they would be used in the year 2000, but such software continues to be used throughout industry and government. In clinical medicine, programs that control monitoring and medication delivery equipment could malfunction or shut down if they are not modified to address this problem.

The FDA Web site was developed to collect responses to a request by the agency that manufacturers provide information about compliance for all products expected to be in service on 1 January 2000. Although originally intended to assist federal agencies that purchase medical devices and laboratory equipment, the resource's audience has been expanded to include the private sector.

Visitors to the site may search a database to find out whether a product has Year 2000 compliance problems. ("Year 2000 compliance" means that a device accurately processes and stores date and time data during, from, into, and between the 20th and 21st centuries.) If a product is not yet compliant, the database provides space for a description of the problem, as well as any planned solution and implementation date. Manufacturers may use the site to submit information about their products electronically and can return to update their existing entries in the database.

In September, U.S. Senator Christopher J. Dodd criticized the slowness of the biomedical equipment industry in responding to the FDA's request for information about compliance, stating that only 755 of 1935 companies contacted by the agency had provided information.

Is your practice prepared for the millennium bug?

If the year 2000 computer problems seems like a lot of hype, consider the possible consequences

From the May 1998 *ACP Observer*, copyright © 1998 by the American College of Physicians.
By Howard Wolinsky

If you're like most internists and use a computer in your practice for records, appointments or billing, take a look at the calendar. The year 2000 is approaching, and it may mean a technological disaster unless you have already begun to deal with the millennium virus. The virus, also known as the Y2K bug, has received a lot of attention over the last few years. Experts predict that it will shut down factories and power plants, bring down phone lines and ground air traffic. The problem, which stems from the inability of many computers to read four-digit dates, is expected to cost as much as \$600 billion to fix.

Put simply, the Y2K bug is a byproduct of computing's early days, when programmers left off the first two digits of the century—representing 1968 as 68, for example—to save precious computer memory. Programmers thought that the abbreviated dates would later be expanded to include four digits as technology improved and memory became cheaper. While technology improved, the Y2K defect was not corrected in many cases. Thus, when the year 2000 arrives, many computers will think it is 1900, not 2000.

While the millennium bug may seem like a lot of hype, experts warn that health care may be hit particularly hard. The medical industry depends on computers for both patient care and business functions, but it is lagging far behind banks, insurance companies and manufacturers in efforts to inoculate against the Y2K bug.

Last fall, for example, the Gartner Group Inc., a technology research company in Stamford, Conn., found that two-thirds of health care organizations had not started to prepare their computer systems for the year 2000. Gartner predicted that health-care organizations that had not launched repair efforts by last fall can expect at least 10% of their information systems to fail.

Problems in your office

For individual doctors, the millennium bug presents serious problems. Edward Yourdon, a computer expert and co-author of "Time Bomb 2000," warned that doctors who run software on desktop computers that are more than two years old are especially vulnerable to Y2K problems. Much hardware from that time is not year-2000 compliant and can present problems.

Aggravating the situation is the fact that many physicians are incredibly lax when it comes to backing up their data. "It will be of little surprise if doctors begin reporting massive failures, disruptions and data loss after Jan. 1, 2000," Mr. Yourdon said.

Another potential trouble spot, Mr. Yourdon said, is software written by individual physicians in the early days of computerization. If such "legacy" software is still in use, it is far more likely to cause problems than packaged software from vendors who update their programs.

In fact, the good news is that most large vendors are addressing the Y2K problem for doctors. For example, the latest version of Medical Manager software, which is used to manage the offices of nearly 120,000 physicians, is year-2000 compliant. John Kang, president of Medical Manager Corp., said his company has also been educating its customers through a direct mail campaign about millennium compliance. It has also created special teams dedicated to upgrade installations.

To avoid problems, however, physicians should contact the vendor of their software and look into upgrades or other fixes. "Physicians must immediately obtain information from their vendors about this matter and take steps well in advance of that date to update, upgrade, or change those systems to prevent failure in their billing systems," said Mark Leavitt, ACP Member, chief executive officer of MedicalLogic Inc., the Hillsboro, Ore.-based maker of the Y2K-compliant Logician and ClinicalLogic medical records software.

But what about physicians who are using software that was custom-made or came from vendors that no longer are in business?

"The problem with Y2K is that in many cases you won't know you have a problem until too late," explained J. Wade Yarbrough, PhD, senior vice president of consulting services at Future HealthCare Inc., a national clinical informatics consulting firm in Chapel Hill, N.C. "Unless you have a way to change the system date to 2000 and test the system, you can't tell if you have a problem or not."

One way to test your system is to set the clock for a date in the year 2000 and see how it responds, but experts say that such a test may do more harm than good. "Setting the clock forward and testing a program can cause a complete disaster," explained Dr. Leavitt from MedicalLogic. "Many programs lock up when log-in dates appear to be out of sequence." His advice: "Get skilled help."

Problems elsewhere

Physicians also need to remember that not all year 2000 problems that affect physicians will take place inside the office. Experts note that many devices with chips vulnerable to Y2K failures are found in hospitals and include ventilators and MRI equipment.

Pam Walter, a partner at the Chicago law firm Gardner, Carton & Douglas and co-chair of the firm's Year 2000 task force, said that problems with these devices can threaten patient care. If records are inaccurate or unavailable, for example, patients could receive the wrong doses of medicine or diagnoses. If patients are injured or die as a result, physicians may have to establish that they were not the cause of the harm, she said.

To protect their patients from potential problems as well as to protect themselves from potential lawsuits, physicians ought to take an inventory of every way in which their practice may be affected by Y2K, Ms. Walter said.

"Physicians should inquire about the year 2000 remedies of every system that could affect their patients or their billing systems, including hospitals, clinics, HMOs and other providers and insurance companies," she said. "If they do not receive adequate answers, they should consider contingency planning."

In general, experts suggest that physicians ask hospitals, clinics and other health-care institutions they work with about potential year 2000 problems. Just asking could help minimize adverse patient experience by forcing institutions to address their year 2000 issues, they said. Ms. Walter added that it also helps demonstrate the doctor's diligence in attempting to assure quality care for their patients.

Meanwhile, you might want to hold off on making plans for the night of Dec. 31, 1999. Already, some travelers are shying from the skies, worried that airports, if not the planes themselves, could encounter problems.

And some hospitals are already trying to limit liability by asking their staffs now not to make plans, said Mr. Kang from Medical Manager Inc. "They are requiring a large staff of doctors and nurses to be present when the clock strikes midnight," he said. "They want to make sure the IVs are dripping and the heart monitors are working."

Possible Sources for Seminars on Y2K

These organizations have previously offered seminars on Y2K. Please contact them directly to determine whether they plan to offer future seminars and to get information about such seminars.

ACP-ASIM

- Annual Session Y2K Seminars April 23 & 24
- www.acponline.org
- (800) 523-1546 ext 2600

American Medical Association

- AMA Member Service Center – (800) 262-3211
- www.ama-assn.org/not-mo/y2k/

Health Care Financing Administration

- www.hcfa.gov
- HCFA toll-free Y2K hotline: (800) 958-4232. This number will connect you with a HCFA Y2K expert who can answer questions regarding medical supplies, Medicare billing and other issues.

Small Business Administration

- www.sba.gov/y2k/

IMMEDIATE ACTIONS TO TAKE

Immediate Actions To Take

- 2 – 1 Four First Steps To Take
- 2 – 2 Four "Don'ts"
- 2 – 3 HCFA Sample Provider Y2K Readiness Checklist

Four first steps to take

1. Call the vendor(s) **today** who supports your practice's critical computer system(s) to find out whether they are Y2K compliant.
 - Ask about your versions of software and hardware for practice management and any electronic medical records, lab, transcription, or other software systems you employ.
 - If the answer(s) are positive, request formal written certification(s) that the systems are entirely compliant.
 - If a system is not compliant, ask whether a retrofit (Y2K patch) is available to make it compliant. If so, and the price is not exorbitant, ask the vendor to immediately schedule your patch -- before installation backlogs begin developing later in the year.
2. If no Y2K patch is available for your computer system, or the cost of one is prohibitive, immediately launch an intensive search for a replacement system. Precious little time remains in which to complete this complex selection and installation process. Turn to Tab 3, "Medical Practice Computer Systems Compliance," and Tab 6, "Selecting a Software System Information Packet."
3. Identify any biomedical devices used in your practice which contain non-compliant embedded computer chips that potentially might affect clinical outcomes. Turn to Tab 4, "Medical Devices Compliance," and visit the listed FDA website to determine which medical devices are vulnerable. Follow the guidance provided regarding vendor compliance certifications, retrofits, replacements, or retirement of equipment as appropriate.
4. Review your other practice support systems, data exchange partners (whose corrupted data could infect your system), and outside vendors. Determine which of them may be vulnerable to Y2K problems. Use the following HCFA supplied check list to review and inventory your support systems. Decide which of them are most critical to sustaining your practice operations; set priorities; and investigate the most important ones first, especially the telephone system. Turn to Tab 5 (Support Systems and Outside Vendors Compliance), for guidance, web sites, model vendor inquiry letters, compliance statements, and other corrective measures.

Four "Don'ts"

1. Don't wait to find out whether your practice computer systems are Y2K compliant. If they are not compliant, vendor support may not be available to make them compliant. In that case, any delay in selecting a replacement system now could result in your practice being caught up in vendor installation backlogs predicted to develop in the remaining months of 1999. At some point around mid year it may no longer be possible to schedule an installation before the year 2000.
2. Don't delay in ordering Y2K patches, if needed. Backlogs could develop for them as well.
3. Don't attempt to self diagnose Y2K compliance by rolling the date of your system forward to the year 2000. Although commonly suggested as an inexpensive diagnostic technique, this approach, according to experts, can lead to serious adverse consequences in some cases, including locking up the system. In other cases the diagnostic results may be incomplete and inaccurate. Hardware may be checked by downloading test software at: http://www.nstl.com/html/nstl_ymark2000.html. However, most practice management software can be safely tested only by a trained computer professional. Often he/she will also be able to determine the compliance of hardware. Self diagnostic software supplied on line by mass vendors of standard word processing and other PC applications presumably is safe to use.
4. Don't rely on someone's oral assurance that your computer or other systems are Y2K compliant. Your business and your patient's lives may be at risk. You need formal assurance, in writing, both to protect yourself legally and to be confident that your operations will be able to safely continue beyond 1/1/00. Don't wait; you need to request that assurance now while there is still time to correct any deficiencies.

SAMPLE PROVIDER Y2K READINESS CHECKLIST

Please note: This checklist is intended as a supplemental guide in helping you determine your Y2K readiness. Consider using this along with other diagnostic and reference tools you have obtained for this venture. The purpose of this checklist is to aid you in determining your Y2K readiness. This information is not intended to be all inclusive. The Health Care Financing Administration will not assume any responsibility for your Y2K compliance.

Item	Y2K Ready	Not Y2K Ready
Bank debit/credit card expiration dates		
Banking interface		
Building access cards		
Claim forms and other forms		
Clocks		
Computer hardware (list)		
Computer software (list)		
Custom applications (list)		
Diagnostic equipment (list)		
Elevators		
Fire alarm		
Insurance/pharmacy coverage dates		
Membership cards		
Medical Devices (list)		
Monitoring equipment (list)		
Smoke alarm		
Telephone system		
Spreadsheets		
Treatment equipment (list)		
Safety vaults		

This information was provided by HCFA from their webpage:
<http://www.hcfa.gov/y2k/pltrenc.htm>

Medical Practice Computer Systems Compliance

- 3 – 1 Computer system compliance: Steps to follow
- 3 – 3 "How Will I, As A Provider, Be Affected By The Year 2000 Challenge?"
- 3 – 6 HCFA April 5, 1999 cut off of 4 digit claims notice
For the most recent information, visit HCFA's Year 2000 Web Site:
www.hcfa.gov/y2k
- 3 – 9 Model Vendor Inquiry Letter and Software Vendor Checklist
- YMARK2000 Software that tests your computer's BIOS for Y2K compliance is available at: www.nstl.com/html/nstl_ymark2000.html
- Tab 6 Selecting A Software System Information Packet

The Year 2000 Computer Problem

Computer system compliance: Steps to follow

For most physician offices, the practice management computer system is the one Y2K compliance problem with the broadest potential ramifications. If that system locks up on 1/1/00, the practice's overall operations are likely to be disrupted. It is also the system which could require the longest lead time to rectify. Therefore give it top priority for investigation. Call the vendor today who supports your practice's computer system(s) to find out whether they are Y2K compliant.

- Ask about the compliance of your specific versions of software and hardware for practice management and for any electronic medical records, lab, transcription, or other software systems you employ.
- If the answer(s) are positive, request formal written certification(s) that the systems are entirely Y2K compliant. Don't rely on someone's oral assurance: your business operations and cash flow may be at stake. You need formal assurance, in writing, both to protect yourself legally and to be confident that your operations will be able to safely continue beyond 1/1/00. A complete list of model vendor compliance inquiry letters can be found at: www.y2kexperts.com/certified_y2k_ready/formdocuments.htm. Act now while there is still time to correct any deficiencies.
- If a system is not compliant, ask whether a retrofit (Y2K patch) is available to make it compliant. If so, and the price is not exorbitant, ask the vendor to immediately schedule your patch -- before installation backlogs begin developing later this year.
- If no Y2K patch is available for your computer system, or the cost of one is prohibitive, immediately launch an intensive search for a replacement system. Precious little time remains in which to complete this complex selection and installation process. Vendor installation backlogs are predicted to develop some time in 1999, probably around mid year. Thus any delay in selecting a replacement system now could result in your practice not being able to obtain installation of your preferred product before the year 2000 begins. See Tab 6 "Selecting a Software System Information Packet" which was developed by the Center for a Competitive Advantage to assist and expedite your selection process.

NOTE: We recommend that physician offices not attempt to self diagnose medical practice software for Y2K compliance (unless they have a proficient computer technician on staff). According to experts, such seemingly simple and commonly suggested diagnostic techniques as rolling the date of your system forward to the year 2000 can sometimes produce serious adverse consequences, including permanently

locking up the system. In the hands of a non-technician, the diagnostic results may also be incomplete or inaccurate. (Self diagnostic software supplied by commercial vendors of standard word processing and other PC applications is an exception which should be safe to use.)

If you wish to test just your hardware, use reliable testing software . The National Software Testing Lab (NTSL), owned by CMP, has freeware to test your hardware. The webpage www.nstl.com/html/nstl_ymark2000.html will test your computer's Basic Input Output System (BIOS) where most date errors originate. Keep in mind, however, that the trained computer professional who tests your practice software can often test the hardware at the same time.

HOW WILL I, AS A PROVIDER, BE AFFECTED BY THE YEAR 2000 CHALLENGE?

Provided by HCFA from: [www.hcfa.gov/y2k/one4\(2\).htm](http://www.hcfa.gov/y2k/one4(2).htm)

You will be affected, either directly or indirectly, by the year 2000 challenge. Taking proactive steps to identify and address potential impacts will be key to your success and meeting the needs of the patients you serve. Let's look at a few examples of how you may be affected.

FINANCIALLY:

If *your* systems and those with which you interface are not Y2K ready, the transfer of information including claims processing information could be affected and therefore, so could your cash flow. If you bill claims to multiple entities (e.g., Medicare, Medicaid, private insurance companies, and managed care organizations) you could face problems if you do not ensure your readiness with *each* of these entities.

If you rely on another entity (e.g. a billing service or clearinghouse) to handle claims filing procedures for you and they are not fully ready, this could add additional costs to your business. This is particularly true if payment for their services is based on the number of claims filed, since your billing vendor may file your claims more than once.

It is important to keep in mind the Y2K challenge is very broad. Here are a few examples of systems that may be affected:

- elevators (e.g., it may include programs for maintenance checks)
- telephone systems (e.g., billing date changes)
- payroll systems
- electrical systems
- office forms (e.g., spreadsheets, form letters)
- office security systems
- referral and order forms

Special Note to Electronic Submitters (to be used by Medicare contractors that currently accept electronic submissions which contain six digit dates of service).
If you or your billing company currently submits electronic claims with six digit dates of service or dates of birth, such as 12/31/98, you will need to change your billing system so it can submit and receive an eight digit date (1998/12/31). (While there are a number of ways to accomplish this, one extremely reliable method is the expansion of the year within your computer system from two to four digits.) HCFA will begin rejecting electronic submissions with six digits sometime in 1999. You will be notified well in advance before contractors begin returning claims for this reason.

WHAT CAN A HEALTH CARE PROVIDER DO TO AVOID POTENTIAL Y2K PITFALLS?

There are key steps you can take to become Y2K ready and excellent sources of information available to help you. Here are a few suggestions to consider. Please keep in mind these are just that, suggestions; they are not intended to replace other actions you are taking or serve as the only steps in your readiness plan.

Step One:

Become aware of how the year 2000 can affect your system. Anything dependent on a microchip or date entry could be affected. Also, do not forget to identify those entities that you depend on or who depend on you. From a systems perspective, inventory both your hardware and software programs. List everything and identify your mission critical (cannot live without) items. These should be your priorities.

Step Two:

Assess the readiness of everything on your list. You can do this by contacting your hardware or software vendor or accessing key information from various web sites (see attachment B). Also, do not forget your maintenance and service contractors; they can help you in deciding readiness as well as systems upgrade and replacement options. In addition, there are many organizations offering services to assess business readiness. Your state association can help you further, particularly in the areas of biomedical equipment and medical devices.

If your particular software program or form is not Y2K ready, you need to decide whether you really need to invest in an upgrade or replacement. In making this decision, bear in mind the potential challenges you could face if changes/upgrades are not made, particularly to programs that support your key business processes.

Step Three:

Update or replace systems and software programs you decide are important for your business continuity.

Step Four:

Test your existing and newly purchased systems and software. **Do not assume a system or a software program is ready just because someone said it was.** Test each just to make sure. During this process, keep track of your test plans and outputs just in case a problem surfaces later.

If you would like to test your interfaces with a Medicare, Medicaid or managed care organization, give them a call so that testing can be considered and arranged.

Step Five:

Develop business contingency (continuity) plans in the event something goes wrong. Focus on the things that would be most problematic for you and your patients. For example, what will you do if....

- Claims cannot be sent in the right format to an insurer;
- Equipment required by your patients does not function properly;
- Laboratory or diagnostic facilities where you refer patients cannot identify and accurately reports to an insurer the dates you submit on your order forms;
- Outputs from monitoring and reporting equipment are not accurate or complete;
- Electronic remittances from Medicare or Medicaid are not retrievable;
- Accounts receivable system does not work properly;
- Checks cannot be deposited in your bank or credited accurately; or
- Payroll system does not function appropriately.

This information was provided by HCFA from: www.hcfa.gov/y2k/4dgtfact.htm

Another Step Forward for Year 2000 Compliance: Medicare Establishes Deadline for Submitting Y2K-Ready Claims

As of: February 10, 1999

Background: Each year more than one million doctors, hospitals, and other health care providers and suppliers submit approximately one billion claims to Medicare to be reimbursed for services provided to Medicare's nearly 40 million beneficiaries. (see footnote 1 - at the bottom) The vast majority of claims are submitted by electronic means, although some are still submitted on paper. This high level of electronic billing allows the federal government to achieve significant operating efficiency and cost savings for the Medicare program and for health care providers and suppliers. This reliance on automated systems has also made the Year 2000 (Y2K) computer fix a major challenge for the Health Care Financing Administration HCFA, the agency that administers the Medicare program.

HCFA is making significant progress in its effort to completely renovate, test, and certify approximately 30 million lines of code on the 78 computer systems operated by its contractors that process and pay Medicare claims. HCFA will be ready on January 1, 2000 to timely and accurately pay claims. It is incumbent upon providers and suppliers to ensure that their billing systems are Year 2000 ready so they can bill Medicare accurately and in a timely manner. In order to bill Medicare, claims must include 8-digit dates, with the year being 4 digits (e.g., 2000).

Over the past year, HCFA has been working closely with its provider partners to ensure a smooth conversion from the old billing formats to new formats that are Y2K-compliant. These efforts include issuing numerous program instructions as well as hosting educational meetings on how to prepare systems for the Year 2000. In addition, HCFA's Medicare contractors have offered, and continue to offer, Y2K-ready software to providers for free or at minimal cost.

Since the Spring of 1998, HCFA has been working with its contractors to begin preparing providers and suppliers for the requirement that they submit all claims using 8-digit date fields. On January 13, 1999, HCFA notified Medicare contractors that, beginning April 5, 1999, claims not submitted in the Y2K format must be returned to providers as unprocessable. On February 1, 1999, the Medicare contractors issued bulletins to all providers detailing this April 5, 1999, compliance deadline.

It is critical that all providers submit bills in the prescribed Y2K-compliant format so that HCFA's systems can continue to process and pay bills promptly throughout the millennium transition. The ability of a provider to submit electronic data interchanges in a Y2K-compliant 8-digit date does not mean that all of the provider's systems are Y2K ready. But it is an indication that the provider has taken a critical and necessary step toward full Y2K compliance.

Providers Must Make Sure Their Billing Systems are Compliant

HCFA wants to ensure there is no disruption to the billing processes or the cash flow between Medicare and its health care delivery partners in the new millennium. HCFA has already readied its systems to be able to receive compliant claims. In order to guarantee the seamless processing of claims, however, providers also must prepare their systems to submit compliant claims well in advance of January 1, 2000. Medicare providers were instructed to begin submitting claims with 8-digit date formats no later than January 1, 1999. HCFA recognized that many providers needed additional time to modify and test their own billing systems and, therefore, allowed extra time before returning non-compliant claims to providers.

On January 13, 1999, HCFA notified Medicare intermediaries and carriers that, beginning April 5, 1999, it will no longer be able to accept claims submitted by providers unless the claims are submitted in a Year 2000 compliant format. On February 1, 1999, the Medicare contractors issued bulletins to all providers detailing this April 5, 1999, compliance deadline. Giving notice to providers two months in advance of the deadline will allow those who have not yet been submitting compliant claims sufficient time to complete any outstanding renovations to, and testing of, their billing systems.

Notifying Providers of This Change

In the Spring of 1998, HCFA began issuing guidance through numerous instructions to the Medicare contractors and provider community on how to begin preparing their billing systems for the Year 2000. Providers were notified of effective dates for submitting Year 2000 compliant claims -- October 1, 1998 for paper claims, and January 1, 1999 for electronic claims.

- HCFA also took or is taking the following additional actions to ensure that the providers and suppliers are fully educated about their responsibilities.
- Instituted system for tracking the number of providers/suppliers or claims submitters (i.e., billing services and clearinghouses) submitting Year 2000 compliant electronic claims and those who are not -- an important tool for identifying and assisting providers that are having difficulty preparing their systems.
- Established a Y2K speakers' bureau, staffed by HCFA personnel around the country, who are prepared to speak at events and offer guidance.
- Publishing a notice in the February 4, 1999 Federal Register to alert HCFA's health care partners to their responsibility to become Y2K compliant, announce the technical assistance that HCFA has provided through its website and speakers' bureau, and underscore the necessity to ensure that billings are compliant prior to April 5, 1999.
- Held, and continues to hold, meetings and conferences throughout the country with major organizations, including the American Medical Association, the American Hospital Association, and other national provider groups and vendors to share information on Year 2000 issues. HCFA has reached thousands of providers through meetings, speeches, and other public events.
- Distributed Year 2000 educational materials on the Internet and by mail to providers nationwide.

Making Progress, But Work Remains

Preliminary data indicate that Medicare's work with the provider community is paying off, but that more work needs to be done. As of the end of December 1998, Medicare carriers reported that approximately

96 percent of Medicare Part B claims submitters that bill electronically (billing services or the providers themselves) are already doing so in a compliant, 8-digit date manner. About 33 percent of Part A claims submitters (institutional providers such as hospitals, skilled nursing facilities, and home health agencies, or their billing services) are submitting claims in a compliant, 8-digit date manner. We expect more progress in the coming months. HCFA will continue to work with its health care delivery partners to educate them about their Y2K obligations, share information, and monitor their progress.

Footnote: 1 - A doctor, hospital or other health care provider or supplier, upon furnishing service to a beneficiary, does not actually bill HCFA directly. Instead, the provider or supplier (or, as is often the case, the billing service with which the provider/supplier contracts) submits a claim for reimbursement to one of the more than 60 private insurance companies (intermediaries and carriers) with which HCFA contracts to process claims. Claims processing includes determining the patient's eligibility for Medicare, whether the rendered service is covered by Medicare, and the correct amount to be paid to the provider for the service. The contractor pays the provider or supplier via a paper check or through electronic funds transfer, and sends a "Medicare Summary Notice" or "Explanation of Medicare Benefits" to the beneficiary informing them of the claim's disposition.

Model Vendor Inquiry Letter and Software Vendor Checklist

The following model business letters are reprinted with permission from Y2K Experts and are provided to assist members in querying their vendors and others regarding Y2K compliance. These generic letters should be adapted to the practice's specific needs and reviewed by legal counsel for conformity with jurisdictional requirements in the area where the practice is located.

Listed below are the sample letters provided in this guide:

Hardware Vendor (PCs Purchased After 1994) – First Contact

Hardware Vendor (PCs Purchased After 1994) – Follow-up

Software Vendor – First Contact

Software Vendor – Follow-up

Software Vendor Checklist

A full listing of form documents available from Y2KExperts can be viewed at:

www.y2kexperts.com/certified_y2k_ready/formdocuments.htm

***Please Note**

If you make any changes to the documents before sending them, be sure to involve marketing, technology and legal professionals. Even subtle changes can impact the effectiveness of the documents.

Hardware Vendor (PCs Purchased After 1994) – First Contact

[date]

[contact name, if applicable]
[company name]
[address]
[city, state, ZIP]
[country, if applicable]

Dear Sir or Madam [or contact name]:

The year-2000 computer date problem (description enclosed) has received much press of late, and our customers have begun to question our ability to provide uninterrupted services up to and beyond the year 2000. As a result, we have begun the process of reviewing all of our internal computer systems and correcting all problems. During an evaluation of the computers we recently purchased from your company (list enclosed), we found that several could not correctly process dates later than 1999, and that our warranty periods expired.

The computer industry estimates the useful life of a personal computer to be around five years. Your systems were built with design flaws – they can't process beyond December 31, 1999 without errors – that will surface after the warranty periods expire, but before the expected, useful life of each computer expires. Had we been informed of this design flaw when we purchased the computers, we would have purchased our machines elsewhere.

We expect these computers to be fixed in a timely manner and without additional charges to our company. Please contact us within three weeks of the date of this letter, so that we may schedule the maintenance, before this flaw causes systemic damage to our business.

Sincerely,

[executive name]
[title (preferably a CEO, CFO, CTO, president or partner)]

enclosures

Hardware Vendor (PCs Purchased After 1994) – Follow-up

[date]

[contact name, if applicable]
[company name]
[address]
[city, state, ZIP]
[country, if applicable]

Dear Sir or Madam [or contact name]:

Our records show that you did not to respond to our previous inquiry (copy enclosed) regarding the design flaw in the computers we recently purchased from your company. We must have your immediate response to this inquiry, because we cannot assure our customers of our company's year-2000 compliance until these hardware errors are corrected.

Your failure to respond promptly to this inquiry is delaying our efforts of preparing our company for the year 2000. We have an immovable deadline, and we cannot afford delays such as this. We are prepared to involve our attorney if you do not contact us within two weeks of the date of this letter.

Sincerely,

[executive name]
[title (preferably a CEO, CFO, CTO, president or partner)]

enclosure

Software Vendor – First Contact

[date]

[contact name, if applicable]
[company name]
[address]
[city, state, ZIP]
[country, if applicable]

Dear Sir or Madam [or contact name]:

The year-2000 computer date problem (description enclosed) has received much press of late, and our customers have begun to question our ability to provide uninterrupted services up to and beyond the year 2000. As a result, we have begun the process of reviewing all of our internal computer systems and correcting all problems.

We are currently using the software products described on the enclosed checklists and have come to rely on them to conduct our daily business. To guarantee uninterrupted service to our customers, we require your assurances that these products are Y2K-Ready (can function without errors up to and beyond the year 2000).

Since many of our software products trade information, and since there are multiple methods used to create Y2K compliance, we face an additional problem. We need to know that the methods used to create Y2K compliance in your products are compatible with the methods used in other products at our company.

Because of the nature of this problem and the short amount of time remaining to prepare our business to survive the year-2000 date change, we are not interested in receiving a canned response to this inquiry. Instead, we've enclosed a Y2K checklist for each of your products in use at our company. Please complete each checklist and return it to the address shown within three weeks of the date of this letter – our customers will not wait long for our assurances; therefore, we cannot afford to wait long for yours.

Sincerely,

[executive name]
[title (preferably a CEO, CFO, CTO, president or partner)]

enclosures

Software Vendor – Follow-up

[date]

[contact name, if applicable]
[company name]
[address]
[city, state, ZIP]
[country, if applicable]

Dear Sir or Madam [or contact name]:

Our records show that you did not respond to our previous inquiry (copy enclosed) regarding the year-2000 compliance status of your software product(s) described therein.

Your delay in providing the information we need is unacceptable and is costing our company the critical time is needed to complete our year-2000 project. In addition to facing an immovable deadline, we have customers that are demanding our response to their year-2000 questions. We risk losing customers over this issue and will not tolerate further delays from your company.

Please fill out the checklists that we once again have provided, and return them to the address indicated. If you fail to complete each checklist in its entirety and return it to us within two weeks of the date of this letter, we will be forced to consider alternative software products, and possibly involve our attorney in this matter.

Sincerely,

[executive name]
[title (preferably a CEO, CFO, CTO, president or partner)]

enclosures

Software Vendor Checklist

The purpose of this document is to gather the information we need for performing a successful evaluation of your software's compliance to year-2000 (Y2K) standards, and for identifying its ability to successfully integrate into our computing environment. You must give a detailed response to each checklist item. If needed, attach separate documentation.

We use "Y2K-Ready" throughout this checklist to mean "capable of processing dates and date calculations up to and beyond the year 2000 without errors." The currently installed software product in question is:

Product Name:	
Version Number:	
Release Date:	
Vendor/Manufacturer:	

1. Is the product Y2K-Ready? (If yes, proceed to question 6.)

☐ Yes	☐ No
------------------------------	-----------------------------

2. When will the product be Y2K-Ready?

--

3. Provide the following information for the Y2K-Ready version of the product:

Product Name:	
Version Number:	
Release Date:	
Vendor/Manufacturer:	

4. Will there be charges associated with the upgrade to the Y2K-Ready version of the product?

☐ Yes	☐ No
------------------------------	-----------------------------

If yes, provide the list of charges and any conditions that apply.

5. Indicate upgrade path, timing, etc., to the Y2K-Ready version of the product.

Y2K-Ready Product

6. What method is being used to process dates? (e.g., century portion of date added to file, 100-year range altered)? Be specific.

7. If "windowing" (100-year range altered) has been used, what is the pivot date (date that controls the century calculation)?

--

8. Has the pivot date been hard-coded, or is it alterable by the end-user?

☐ Hard coded	☐ Alterable
-------------------------------------	------------------------------------

9. Does the product rely on any date-sensitive programs not written by your company? (If no, proceed to question 11.)

☐ Yes	☐ No
------------------------------	-----------------------------

10. For each of these programs, list the following:

Product Name:			
Version Number:			
Release Date:			
Vendor/Manufacturer:			
Y2K-Ready?	☐ Yes	☐ No	
Tested by your company?			
Included in installation?			

11. When product is installed, will the installation routine overwrite any common routines or programs (such as DLLs or APIs) that may have been supplied with the operating system or by another vendor? (If no, proceed to question 14.)

☐ Yes	☐ No
------------------------------	-----------------------------

12. For each of the routines or programs that will be overwritten, list the following:

Product Name:			
Version Number:			
Release Date:			
Vendor/Manufacturer:			
Y2K-Ready?	☐ Yes	☐ No	

13. For each of the routines or programs that will be overwritten, describe the method used to ensure that overwriting these routines or programs will have no adverse effects on other software that is dependent upon them. Be specific.

14. Does the product rely on the computer's system date for any functionality?

☐ Yes	☐ No
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15. List any other pertinent facts about your product that you feel may be helpful in our efforts to bring our systems up to Y2K compliance.

MEDICAL DEVICES COMPLIANCE

Tab 4

Medical Devices

- 4 – 1 Intro Statement from the HHS Biomedical subcommittee
- 4 – 4 Y2K and Biomedical Equipment
- 4 – 9 Year 2000 Preventative Liability Maintenance Countdown
 Provided by Ober, Kaler, Grimes & Shriver Attorneys at Law

Other Resources

- “The Year 2000 Problem: Guidelines for protecting your patients and practice” This guide was produced by the American Medical Association and can be accessed by ACP-ASIM Members at:
<http://www.acponline.org/private/y2k/anamanue.pdf>
- FDA Year 2000 web site
www.fda.gov/cdrh/yr2000/year2000.html

Biomedical Equipment Subcommittee Purpose and Action

**Gayle Finch, Chair
Department of Health and Human Services
Health Care Financing Administration**

Background

Establishment and operation of the subcommittee

The Biomedical Equipment Subcommittee of the CIO Council's Y2K Committee was established in June 1997. Within HHS, the FDA plays the lead operational role, but other health related agencies (HCFA, NIH, CDC, HHS) are also concerned about the implications of biomedical equipment for patient health and safety. Other key participants include the Department of Veterans Affairs and the Department of Defense. We are also working with the National Patient Safety Partnership, a consortium of medical professional associations, in an advisory capacity. The Subcommittee also reports to and meets with John Koskinen bi-weekly.

Issuance of a data request to the manufacturing community

Following consultation with the Health Industries Manufacturing Association, the Medical Device Manufacturers Association, and the Health Equipment Manufacturers Association, the Subcommittee worked with the Office of Management and Budget regarding the issuance of a letter requesting information regarding the Y2K compliance of medical devices and scientific laboratory equipment. This letter was signed by Deputy Secretary Kevin Thurm on January 21, 1998, and mailed to all medical device manufacturers and approximately 3,000 manufacturers of scientific laboratory equipment.

The results from the survey were disappointing. Only about 10% of the 16,000 manufacturers had responded at the expiration of the initial reporting period. Ultimately, the FDA decided to focus on the approximately 2000 manufacturers who make products containing electronic components and who therefore are Y2K vulnerable. We have now received responses from approximately two-thirds of these manufacturers. The FDA and HIMA are contacting the rest, but believe that most of these firms do not manufacture products with date routines. All of the responses to the letter, several follow-up letters, and the publication of the names of non-respondents have been posted on the FDA website located at www.fda.gov.html. The initial posting contain specific information about non-compliant product status, or a certification that all of the manufacturer's products are compliant.

Of the 1,491 manufacturers who reported products that use dates, 59% report no date problems and 49% report one or more products with a date-related problem. 353 manufacturers describe 784 products with date problems, but are still assessing their products (so this total could increase).

Current activities

The existing data base

The data base can be used to determine product status as provided by the manufacturer and to compare the information in the data base against information provided via web site or other means from health care facilities. The user can also print listings, and download the data base. The description of the type of product and the description of the problem are often inadequate, and there is no search capability for "type of product" or "specific model." Finally, compliant products are not listed.

Improvements to be made

Current activities focus on recommendations made by the National Patient Safety Partnership for the expansion of the content of the FDA data base to improve its functionality, and thereby its utility to users.

These recommendations include the posting of all compliant Y2K vulnerable devices, the inclusion of manufacturer name, a generic description of the type of product, and the specific model name and number. The partnership has also recommended the inclusion of an explicit statement of how the solution will be implemented, and whether the manufacturer or the owner is responsible for the cost of repair or replacement. Additional recommendations include a standard way to describe the type of product (e.g., the FDA classification names or the Emergency Care Response Institute names). The FDA has agreed to implement these recommendations. The only recommendation to which the FDA has only agreed in part concerns testing protocols and specific tests used by manufacturers to verify compliance. Since the FDA does very little product testing (under Federal law, the FDA tests certain equipment for levels of radiation emissions in medical devices), they have agreed only to provide a point-of-contact to supply testing information.

Implications for health care providers

Health care providers should use the FDA web site as a resource, but absolutely must deal with their suppliers on the equipment that they own and operate. Nothing can replace the customer/supplier relationship.

Manufacturers must compile a complete inventory of their medical devices and scientific laboratory equipment and vigorously pursue remediation. In addition, they must ensure that their systems are tested end-to-end, where possible (e.g., a system which includes information technology as well as medical equipment with embedded chips.)

Many manufacturers have posted to the FDA web site, and we thank them for doing so. However, where manufacturers have failed to report - and we emphasize that we think that failure to report indicates an unacceptable level of due diligence - the provider can be left high and dry by its suppliers. All providers must have contingency plans that include alternative suppliers, especially since some products may be declared obsolete, compliant versions are unavailable, or the product is back-ordered.

Only the providers that make a very highly proactive stance on Y2K remediation are likely to achieve Y2K compliance for their medical devices and scientific laboratory equipment. It pays to be aggressive.

Conclusions

- Providers must develop thorough Y2K remediation plans, and medical equipment must be a key facet of the plan.
- Providers must develop contingency plans in case your current suppliers are not ready, or do not have similar, compliant products in stock.
- Providers should use the FDA web site, and links to that web site, to augment your existing supplier information.
- Providers must protect the quality of care and patient safety by ensuring that they become totally Y2K ready.

Y2K AND BIOMEDICAL EQUIPMENT

Gayle Finch
Director, Division of Information Analysis and Investment
Department of Health and Human Services
Health Care Financing Administration
GFinch@HCFA.GOV
410-786-8024

Establishment and Operation of The Biomedical Equipment Subcommittee

- Established in June 1997 to safeguard patient health and safety by ensuring Y2K compliance of medical devices and scientific laboratory equipment
- HHS, DoD, and VA are the major Federal players
- National Patient Safety Partnership provides advice to the Subcommittee
- Reports to John Koskinen

The FDA's Role in Medical Devices

- Conducts pre-market review of new products
- Conducts Manufacturing Oversight under the Quality System Regulations
- Conducts post-market surveillance and medical device reporting
- Conducts public health activities

FDA Authority for Problem Products

- The FDA can take action to require a product recall when the product presents an unreasonable risk of substantial harm to the public health"
- FDA will monitor reports of Y2K problems with emphasis on devices that could present significant risk to patients, and investigate and take action where warranted

What Have HHS/FDA Done Regarding this Y2K issue?

- Issued a January 1998 letter from the HHS Deputy Secretary announcing the establishment of the Biomedical Equipment Data Base and asking for compliance information
- The FDA has issued several follow-up letters

What Have HHS/FDA Done Regarding this Y2K Issue? (cont)

- The FDA has also issued letters to manufacturers on manufacturing processes
- HHS and FDA plan additional communications outreach with manufacturers, health care providers, and consumers

The Biomedical Equipment Data Base

- FDA-operated world wide web site -- WWW.FDA.GOV (select the Year 2000 item)
- Data provided by manufacturers
- Voluntary submission of data
- "Certification" by manufacturers
- Continually updated
- Searchable by manufacturer
- "Downloadable"

Data Base Content

- Lists Y2K non-compliant products
- Manufacturer certifies all products are compliant
- Manufacturer certifies that none of their products use dates
- Manufacturer provides a link to their web site where information is posted

HHS/FDA Get Tougher

- FDA issued a September 2, 1998 letter to manufacturers with probability of computer usage
- Asked manufacturers to submit information
- Requested report on assessment work
- Warned that non-respondents would be publicly identified

Y2K Compliance Definition

- Y2K compliance is defined as: the product accurately processes and stores date/time data (including, but not limited to, calculating, comparing, displaying, recording and sequencing operations involving date/time data) during, from, into, and between the 20th and 21st centuries and the years 1999 and 2000, including correct processing of leap year data

What Does the Data Base Reveal?

- Response rates are disappointing; companies may still be assessing
- Most non-compliant products involve "date stamping"
- A limited number of products have significant operational problems
- PC products have "PC" type problems
- Manufacturers are providing a variety of solutions

Manufacturers Responsibilities Under the Law

- Report problems with devices
- User facilities, as well as manufacturers, may report problem devices
- Reports of corrections and removals to address a risk to public health

The Existing Data Base

- Users can determine product status as provided by the manufacturer against information provided via other web sites or health care facilities
- The user can search on manufacturer name, print listings, and download the data base

Data Base Improvements to be Made by the FDA

- The FDA will provide information on "compliant" as well as "non-compliant" products, including manufacturer, product description, and model name/number
- Improved product and problem descriptions
- Explicit statement of how solution will be implemented (manufacturer or owner responsibility)

Data Base Improvements to be Made by the FDA (cont)

- Capability to search by “product type” or by model name or number
- Standardization of nomenclature
- The provision of a testing point of contact
- The provision of a manufacturer genealogy to document mergers and acquisitions

Implications for Providers

- The FDA data base and other web sites are valuable, but nothing can replace the customer-supplier relationship
- Providers must compile a complete inventory of their biomedical equipment and aggressively pursue the acquisition of manufacturer certifications for all products

Implications for providers (cont)

- Providers must ensure their systems are tested end-to-end, including networks consisting of both IT and medical equipment
- Providers should have contingency plans that include alternative sources of supply in case manufacturers won't provide information

Testing

- Each provider must make its own decision whether certification is sufficient
- You may be able to convince your suppliers to test their own equipment, or to help you test with manufacturers' representatives on site, if you are a large facility
- If you decide to test yourself, be aware that you could off-load liability from the manufacturer to your facility
- Weigh the costs and benefits of testing carefully

SUMMARY

- The FDA and other Y2K data bases are helpful, but nothing can replace the customer - supplier relationship
- Weigh the costs and benefits of testing decisions, including issues of liability
- Ensure that your systems are assessed and remediated with time to spare
- Develop contingency plans in case of system failure

The following information was provided by:
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YEAR 2000 PREVENTATIVE LIABILITY MAINTENANCE COUNTDOWN

**Y2K - A legal audit can help to protect health care providers
from Year 2000 failures and liability.**

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by

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Who is responsible for ensuring that your patients on ventilators will still be breathing at 12:01AM, January 1st, 2000?

Who is responsible for ensuring that your patients on the operating table are not over-anesthetized, under-anesthetized or even not anesthetized at 12:01AM, January 1st, 2000?

Who is responsible for ensuring:

that your drug distribution systems are still dispensing and tracking medications correctly;

that your patient who fell and is lying on her kitchen floor with a broken hip gets through to the health care provider when she pushes the emergency call button;

that your infusion pumps are properly recalibrated by embedded recalibration registers;

that your Holter monitors are providing reliable date and time stamping; and

that your blood mixer is still accurate at 12:01AM, January 1st, 2000?

With the next millennium fast approaching, litigation has already started across the country regarding responsibility to make equipment and software compliant for the Year 2000 (Y2K).¹ In one such case, after being faced with eight class action suits alleging violations of the New

Jersey Unfair Trade Practices Act for failing to disclose the lack of Y2K compliance. Medical Manager Corporation of Tampa, Florida recently settled out of court. According to the terms of the settlement, the corporation agreed to provide each of its approximately 12,000 purchasers of the non-Y2K compliant medical software a free upgrade, saving them more than \$30 million. In addition, the corporation will be reimbursing those who have already paid for the upgrade, and will be paying a total of \$1.5 million in legal fees and cash settlements.

While upgrading software and equipment is being addressed now, courts have not yet given guidance on the allocation of liability among health care providers, manufacturers, insurers and others in the event of an injury or death caused by a Y2K failure of a biomedical device, as it is at least a year before any such case could be filed. There are numerous potential causes of action for such a scenario, including agency enforcement actions, medical malpractice, personal injury, wrongful death, misrepresentation, fraud and breach of officers' and directors' fiduciary duties. Furthermore, many insurance policies will not cover losses due to Y2K failures for any of a number of reasons, including foreseeability of loss.

The federal government and many states are in various stages of drafting legislation which would clarify and/or limit liability issues regarding Y2K failures and which might ultimately provide binding direction in distribution of responsibility.ⁱⁱ Pre-filed Maryland House Bill 8 was just introduced on January 13, 1999. While it is unknown whether this proposed bill will eventually pass, it would provide affirmative defenses to governmental entities and others who, in general, act with due diligence or with the standard of care required normally of directors under current Maryland law, in the absence of explicit contractual provisions dealing with this issue.

In the meantime it is important to determine as soon as possible what steps need to be taken to minimize both the risk of harm to patients and the risk of liability exposure. Having counsel conduct a thorough legal audit and implementing a preventative liability maintenance plan are crucial in this process.

WHO IS RESPONSIBLE FOR TESTING AND CERTIFYING THAT BIOMEDICAL EQUIPMENT IS Y2K COMPLIANT?

Whether a health care provider should rely on a manufacturer's certification of Y2K compliance or whether the health care provider should also perform independent tests to confirm Y2K compliance is a key issue in conducting a legal audit and implementing a preventative liability maintenance plan.

There is no clear answer to this question because the current regulatory environment for Y2K issues is in flux and evolving. At this time, research reveals non-binding authority for both approaches. On the one hand, the United States Department of Health and Human Services (HHS), the Food and Drug Administration (FDA) and the Veterans Health Administration (VHA) rely on the manufacturers of biomedical equipment to validate, test and certify that equipment is Y2K compliant.ⁱⁱⁱ Many legal and journal commentators concur with this approach.

On the other hand, the General Accounting Office (GAO) and American Hospital Association (AHA), as well as others, suggest that health care facilities also test biomedical devices and systems themselves.^{iv}

On June 24, 1998, the FDA issued "Guidance on FDA's Expectations of Medical Device Manufacturers Concerning the Year 2000 Date Problem,"^v indicating that manufacturers should be responsible for ensuring compliance because "only the manufacturer has the detailed knowledge of the design of specific devices that is required to effectively evaluate the potential for risk to patients."^{vi} Furthermore, "[u]nder the Quality System Regulation (21 C.F.R. part 820), device manufacturers must ensure and document the quality of their design and manufacturing processes. This regulation places a continuing responsibility on manufacturers to investigate device malfunctions and to prevent potential malfunctions, including those that could be caused by incorrect processing or recording of dates."^{vii} In addition, the FDA has an on-line national clearinghouse which lists voluntary responses to its requests for Y2K compliance status from some manufacturers at "www.fda.gov/cdrh/yr2000/year2000.html". Just recently responses to the VHA's requests for compliance status were included in the FDA clearinghouse as well.

According to the GAO Report, the VHA also decided to rely on manufacturers' Y2K certifications because some manufacturers stated that manipulating the embedded software may void their certification to the FDA that the equipment is safe for patient use. This would then expose the VHA, or any similar entity that performed tests, to legal liability should the equipment later malfunction and harm a patient.^{viii} A few weeks ago the VHA published on the Internet *The Year 2000 Medical Device Assessment: Guidebook*, stating that the original equipment manufacturer should be the primary source for compliance information because:

No other source, or combination of sources, can provide device-specific information while simultaneously ensuring proper and thorough testing. The manufacturer is the only source of design data regarding time and date usage; this proprietary information is unavailable to end users including biomedical engineering staff. Testing these devices can easily be incomplete, destructive, or inaccurate through no fault of the tester or its devised protocol. Testing has the potential to harm patients through inadvertent changes in internal settings that are not viewable or easily reset by a biomedical technician.^{ix}

In contrast, the recent GAO Report recommends that the Secretary of Veterans Affairs, the Veterans Affairs' Under Secretary for Health, the Secretary of Health and Human Services and the Commissioner of the Food and Drug Administration "take prudent steps to review the test results for critical care/life support biomedical equipment, especially equipment once determined to be noncompliant but now deemed compliant, and that for which there are concerns about the determination of compliance, and make the results of these reviews publicly available through the single data clearinghouse."^x The GAO Report further recommends that these agency

officials "determine what legislative, regulatory, or other changes are necessary to obtain assurances that the manufacturers' equipment is compliant, including performing independent verification and validation of the manufacturers' certification."

The VHA's response to this report is that it lacks the legislative or regulatory authority to implement such a recommendation and that HHS should be responsible for such actions. HHS' response is that submission of appropriate compliance certification by the manufacturer is sufficient and that it lacks adequate resources or time to complete this type of review.^{xi}

Similar to the GAO, the AHA suggests that a health care facility should test every system itself. The AHA also notes that individual units of the same make and model may produce different Y2K compliance results because individual microchips may have been manufactured by different suppliers or at different times.^{xii}

Associate Director Britton Berek in the interpretation unit of the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) has said that JCAHO does not have a specific standard regarding the responsibility for testing of biomedical devices for Y2K compliance. While JCAHO is very concerned about biomedical equipment compliance being addressed in a health care facility's plan, JCAHO does not mandate a specific approach to biomedical equipment testing. However, Mr. Berek indicated that JCAHO surveyors will be addressing Y2K compliance issues during 1999 in the context of existing standards. According to JCAHO's *Inside Perspective*, "[s]urveyors will ask you whether your organization is engaging in efforts to identify its Y2K vulnerabilities; upgrade software programs and equipment to make them Y2K compliant; identify corrective manual alternatives when necessary; consider possible community disaster scenarios related to Y2K in your emergency preparedness planning; and develop contingency plans to handle Y2K disruptions that are not identified ahead of time or are outside the organization's control."^{xiii}

While there are proponents for each of the two approaches to testing, a number of additional factors should be taken into consideration as well, including:

- whether a manufacturer provides a certification at all;
- the scope of certification provided;
- the terms of any contract, license agreement or maintenance agreement with each manufacturer, particularly warranty, intellectual property and confidentiality provisions;
- the potential threat of harm posed by the failure of each biomedical device; and
- the cost and feasibility of replacing a particular biomedical device.

Each of these factors is discussed below.

Manufacturer Response

There are a variety of possible manufacturer responses, including:

1. **The equipment is Y2K compliant.** Even if a manufacturer provides a certification that the equipment is Y2K compliant, it is important to evaluate the scope of each certification, as discussed below.
2. **No response at all.** Some manufacturers refuse to respond. Others cannot be located, and some have gone out of business.
3. **A response which does not certify.** For instance, some manufacturers merely state an awareness of the problem and indicate they are working on it. Others state that the compliance status of an item is still pending.
4. **The equipment is non-Y2K compliant, but an upgrade is available.** The cost to upgrade equipment and/or software may vary widely. Examples can range from zero to six figures. Whether you, the manufacturer or vendor should pay for this upgrade depends on a careful review of the contract terms and conditions.
5. **The equipment is non-Y2K compliant, and no remedy is available.** If a manufacturer provides this type of evaluation, the equipment may be worthless by the Year 2000, or there may be a way to work around the problem. Depending on the situation, a health care facility may have to make other arrangements or purchase replacement equipment.

Scope of Certification

Even when a manufacturer certifies that its equipment is "Y2K compliant," there are varying levels of assurances - from the very general and not so reassuring, to the very specific and much more reassuring. For instance, a certification may:

- refer only to general indications of Y2K compliance;
- refer to the general Y2K compliance of a manufacturer's entire product line;
- indicate that certain products have been tested and are compliant; or
- indicate that a particular item has been tested in a certain way and is compliant.

It should be noted as well that while a certification may be provided with a very high level of assurance, skeptics insist that some of the information is nevertheless unreliable.^{xiv}

There are also different definitions of the meaning of "Y2K compliant." As an example, the FDA defines "Year 2000 Compliance" to mean that:

with respect to medical devices and scientific laboratory equipment, that the product accurately processes and stores date/time data (including, but not limited to calculating, comparing, displaying, recording and sequencing operations involving date/time data) during, from, into and between the twentieth and twenty-first centuries, and the years 1999 and 2000, including correct processing of leap year data.

The above definition is a slight modification of the definition of "Year 2000 Compliance" as used in the Federal Acquisition Regulations for information technology products to address medical devices and scientific laboratory equipment

(see 48 CFR Part 39.002). The intent is that for products to be Year 2000 compliant they must function as intended or expected, regardless of the date.^{xv}

However, each manufacturer may respond to a Y2K compliance request with its own interpretation of what it means for a biomedical device to be "Y2K compliant." This lack of consistency should be taken into account when evaluating each certification.

Contractual Terms

Your health care facility will have specific contractual warranty, intellectual property and confidentiality provisions with each manufacturer. These provisions may constrain the right to test for Y2K compliance, as discussed below:

1. **Warranties** - Tampering with a biomedical device in order to conduct Y2K testing may invalidate a manufacturer's warranty, depending on factors such as the purchase or sales contract, license agreement and maintenance agreement.
2. **Intellectual property** - If a health care facility does not own the rights to particular software, tampering with it may infringe on the owner's proprietary rights or may constitute a breach of the license agreement.
3. **Confidentiality** - Allowing a third party to access software may breach confidentiality obligations contained in the license agreement. It may also expose a health care facility to liability for misappropriation of trade secrets.

While you should be aware of these issues, there may be legal obligations, remedies and defenses for proceeding with testing anyway, which counsel can analyze.

Risk of Harm

Every health care facility has its unique inventory of biomedical devices. In order to effectively prioritize, each machine should be individually evaluated to determine the potential harm to

patients and others the item were to malfunction. Research reveals that equipment such as apnea monitors, defibrillators, fetal monitors, image-guided surgery systems and infusion pumps are examples of high-risk equipment; absorptiometers, ambulatory ECG recorders and scanners, blood gas/pH analyzers and medication management units are examples of medium-risk equipment; and audiometers and diathermy units are examples of low-risk equipment.^{xvi}

Replacement Cost

Replacement of certain items may be the safest option, although the cost of each item may also vary widely. However, at this late date, there may be practical obstacles involved in replacing certain devices and equipment such as a lack of availability by the year 2000, or the lack of resources to train the professionals needed to operate the item.

WHAT IS A HEALTH CARE EXECUTIVE TO DO?

It is essential that every health care facility undergo a Y2K legal audit. In the event that your facility has not already undergone an audit, counsel can prove invaluable in assessing your institution's current strengths and weaknesses. While recognizing that it is late to be starting this process now, there is still almost one year to implement and/or continue preventative measures. Issues counsel can address include:

- advice with regard to making an inventory of all biomedical devices;
- review of all contracts, license agreements and maintenance agreements;
- review of all outsourcing agreements;
- review of any correspondence already received from manufacturers, suppliers, vendors, and those that service and repair the equipment, regarding Y2K compliance;
- review of all insurance policies;
- review of any compliance plans already in place;
- advice regarding documentation of Y2K compliance efforts; and
- advice regarding contingency planning.

If your institution does not already have a preventative liability maintenance plan, counsel can assist you with issues such as:

- customization of the definition of "Y2K compliant" to your specific health care facility, particularly for requests for certifications, responses to requests for certifications and contract negotiation;
- drafting of letters to each manufacturer requesting Y2K compliance certification for each biomedical device used by your health care facility;
- drafting of letters to all vendors, suppliers and those that service and repair the equipment requesting Y2K compliance certification for their companies;

- negotiation with manufacturers to make each biomedical device used by your health care facility Y2K compliant for as low a cost as possible;
- creation of an individualized testing strategy for your health care facility;
- selection of only those individuals and/or firms to test the equipment that specialize in Y2K testing and have an excellent reputation, as confirmed by references;
- minimization of exposure vis-a-vis each manufacturer, software owner and licensor of equipment tested by the hospital;
- negotiation to obtain source codes and testing recommendations, where possible, from each manufacturer, software owner and licensor of equipment tested by the hospital;
- review of mechanisms to prevent loss of Y2K compliance status, i.e., from later repairs or linkage to non-Y2K compliant systems;
- negotiation of the purchase of new equipment when necessary including negotiation of allocation of responsibility for Y2K compliance;
- negotiation of the purchase of additional insurance where necessary and feasible;
- implementation of appropriate board of directors' resolutions;
- implementation of appropriate measures to ensure written documentation of Y2K compliance efforts;
- pursuit of all legal rights and remedies.

There are many other Y2K legal issues every health care facility needs to address as well. The following is a list of some of these issues:

- advice with regard to the assessment of inventory and all systems throughout the facility that are (i) computer related; (ii) use software applications; (iii) have an embedded chip even though not readily apparent; and (iv) have non-embedded software but which are used to enhance the operation of other devices;
- responses to Y2K compliance requests;
- Securities and Exchange Commission disclosures, where applicable;
- completion of other regulatory disclosure and compliance requirements;
- consideration regarding accounting and tax consequences; and
- due diligence in conjunction with a merger, acquisition or other venture.

CONCLUSION

There are precious few days left before the next millennium begins and the Y2K compliance status of every device is ascertained for sure. Make sure your health care facility has minimized the risk of patient harm and minimized its liability exposure by exercising due care. Arrange for a Y2K legal audit and a customized preventative liability maintenance plan now.

- i. See, *inter alia*, Against Gravity Apparel, Inc. v. Quarterdeck Corp., (N.Y. Sup. Ct., New York County filed July 30, 1998); H. Levenbaum Insurance Agency, Inc. v. Active Voice Corp., No. 98-3864H (Mass. Super. Ct., Suffolk County filed July 28, 1998); Stein v. Intuit, Inc., No. 98603134 (N.Y. Sup. Ct., New York County filed June 25, 1998).
- ii. See "<http://www.ita.org/Y2Klaw.htm>" for tracking of state and federal Y2K legislative initiatives.
- iii. Nevertheless, VHA will perform limited functional testing of replacement equipment and those devices which have been modified by the manufacturer to be Y2K compliant. "YEAR 2000 COMPUTING CRISIS - Compliance Status of Many Biomedical Equipment Items Still Unknown." GAO Report to the Chairman, Subcommittee on Oversight and Investigations, Committee on Veterans' Affairs, House of Representatives, September 1998 at 10 (GAO Report).
- iv. GAO Report, "Y2K: Mission Critical," American Hospital Association (AHA Publication), Summer 1998.
- v. 63 Fed. Reg. 34,433 (June 24, 1998).
- vi. *Id.* at 34,436.
- vii. *Id.* at 34,440.
- viii. GAO Report at 10.
- ix. *The Year 2000 Medical Device Assessment: Guidebook*, December 1998, at 13.
- x. *Id.* at 22.
- xi. *Id.* at 23-24.
- xii. AHA Publication at 12 (citing *Materials Management in Health Care*, November 1997, at 18).
- xiii. *The Inside Perspective*, News from the Joint Commission of Healthcare Organizations, (January 2, 1999), "<http://www.jcaho.org/pubedmul/publicat/tip/tip9812.htm>".
- xiv. Morrissey, John and Hensley, Scott, "The Countdown Continues," *Modern Health Care* 46, 48 (August 10, 1998); "Device Makers No Help to Providers On Y2K, Witnesses Fume," *Medicine & Health* (August 5, 1998) (quoting Joel Ackerman of the Rx2000 Solution Institute).
- xv. Enclosure to January 21, 1998 letter to manufacturers from the Deputy Secretary of the Department of Health and Human Services requesting submission of product information.
- xvi. Audie G. Lewis and Victoria S. Weingart, *The Year 2000 Health Care Survival Guide*, at 12 (1998) (reprinting with permission a "Starter List of Year 2000-Susceptible Equipment Organized by Risk Level" from *Health Devices* 26, no. 12 (December 1997)).

**SUPPORT SYSTEMS AND OUTSIDE
VENDORS COMPLIANCE**

Tab 5

Support Systems and Outside Vendors

- 5 – 1 Compliance process
- 5 – 3 Checking telephone systems
- 5 – 5 Basic vendor inquiry form letters

Links

- www.y2kexperts.com - Additional vendor inquiry letters, etc.
- www.year2000registry.com - Vendor compliance statements

Building Maintenance

If you rent or lease space in a commercial building, you should contact the maintenance company immediately. If the elevators, security systems, fire protection systems, etc., fail to operate properly when 2000 rings in, you'll be hurt just as badly as if your internal systems had crashed. These systems take time to modify, and if the maintenance company can't get done in time, you need to know now, so you can start planning your move.

You might also consider treating your vendors much like you would your customers. Offer to help them overcome the Y2K crisis, and you may establish relationships that serve you well into the new millennium.

* A portion of the information above came from: Certified Y2K Ready by Bill E. Wagner.
President Y2Kexperts.Com

Compliance Process

There are a wide range of outside parties with whom a medical practice has business relationships and whose Y2K readiness could affect the practice. Vendors supply products and services that could fail – **the telephone system** (See information later in this tab) being one of the most critical. Hospitals, labs, and others supply important services to the practice and also may exchange electronic data/reports that could corrupt the practice's computer system, or vice versa. The practice therefore should contact each organization that supplies critical products, services or information. Failure to ensure that they are Y2K ready could mean disaster for your practice. Use the HCFA checklist (from Tab 2) to identify all of the outside parties to contact.

Due to the potential loss of business and legal implications, vendors and others may vary in their forthrightness on this issue. In most cases, assume you will be writing several letters to each party. A few basic model letters are included in this section or you can download other more specialized letters from the y2k experts web site:

www.y2kexperts.com/certified_y2k_ready/formdocuments.htm

If vendors prove unresponsive, you may need to consider involving your attorney.

Start writing vendors. You'll need to give them time to respond to your requests for Y2K-compliance assurances. In many cases, it will take more than one letter and possibly follow-up phone calls to get a response. In addition, you'll need time to replace the vendors whose products or systems will not be ready for the year 2000. (As a rule of thumb, if a vendor doesn't reply after three letters, you'd better start looking for a replacement.)

Keep paper copies of every letter or E-mail concerning Y2K – don't rely completely on your computer system through this difficult time. Document the time and duration of, and individuals involved in, phone calls and meetings. Save every response. The more documentation you have, the better you'll be if you end up in a Y2K lawsuit.

Utility Companies

Utility companies can be problematic, because, in many areas, there is only one option for a particular utility. If you receive no response (or a negative response) to your first letter, you should involve your attorney. You have two primary objectives:

1. Make sure the utility company is Y2K-Ready.
2. Position your company to recuperate losses and defend against lawsuits if service stops and hurts your business.

In some instances (like electricity), you might consider using an independent backup system, like a generator. Of course, you'll have to make sure the generator doesn't have a faulty Y2K microchip. And, if it's a gasoline-powered generator, be sure that your local gas company will be capable of supplying fuel after January 1, 2000.

The real problem is that your internal systems are just the tip of the iceberg. As you can imagine, the year-2000 problem is a significant challenge for the telecommunications industry. Individual companies have millions of lines of code in their computer infrastructures that control areas such as order entry, call routing and billing. They also have an untold amount of code involved in ancillary applications that may be critical to the service they provide your business.

Because of the number of interconnected elements involved, international calls will be the most susceptible to problems. Consider this: When you place a call from Los Angeles to Munich, that call goes through dozens, if not hundreds, of telephone computers, all part of the Public Switched Telephone Network (PSTN). The only way to completely test a system is to test it end to end. Can you imagine the logistical nightmare of scheduling and performing that test throughout the PSTN? Companies around the globe would have to coordinate and synchronize a date change in their computer systems without interrupting normal business – an impossible task. And, if even on system at one of those companies can't handle the year-2000 date change, your phone call will not connect. So, even if you know your PBX is compliant, you can never be sure the calls you place will go through on January 1, 2000.

During the planning stages of your Y2K-compliance efforts, the one question you must ask yourself is this: "How long could we survive as a business without a dial tone?" Probably not very long. There are, however, ways to hedge your bet. For instance, you could:

- Build your local client base.
- Open branch offices close to your key customers.
- Establish collaborative relationships with competitors (you support their clients in your areas; they support your clients in their areas).
- Install backup copies of your website throughout the world.
- Distribute your call center to multiple sites – limiting your exposure
- Encourage carrier competition as a way to increase your available options.

Within your specific business situation, you must weigh each option carefully to determine your best course of action.

Checking Telephone Systems

By Patrick K O'Brien
Partner, Orbtech

From: Certified Y2K Ready
By Bill E. Wagner, President Y2Kexperts.Com

We tend to take the telephone for granted these days. Telephone carriers have done a good job of building a reliable public network, and this reliability has given us tremendous confidence in our communication systems. But, that's all about to change, because phone companies, like businesses everywhere, have neglected to address the year-2000 problem in a timely fashion.

Beyond most communication systems (such as voice, E-mail, fax, paging and video) is a complex maze of thousand of interconnected computer systems around the world – all relying on date information. This makes them all susceptible to the year-2000 problem. Most businesses rely more heavily on their telephone systems, however, so that is where we will focus.

Internal Systems

The place to begin testing for Y2K-Readiness is your Private Branch Exchange (PBX). PBX systems are proprietary, so your best source for compliance information will be the equipment vendors themselves. Most of the larger vendors (such as Lucent Technologies, Inc., Nortel, Inc. and Mitel Corp.) have detailed which of their systems are Y2K-compliant and how to fix those that aren't. Contact these vendors for the information you need.

Next, consider the communication-related areas of your business that interact with your phone system:

- Voice mail and E-mail systems
- Cost accounting systems
- Computer Telephony Integration (CTI) applications
- Automatic call distributors
- Interactive voice response systems
- Call center software
- Pagers and paging systems
- Networking hardware and software
- Internet connections

Each of these falls under hardware, software or services. To determine their Y2K-compliance, you should follow the steps for testing hardware and contacting vendors outlined elsewhere in this guide.

Global Systems

Noncomputerized-Product Vendor – First Contact

[date]

[contact name, if applicable]
[company name]
[address]
[city, state, ZIP]
[country, if applicable]

Dear Sir or Madam [or contact name]:

Our records show that you did not respond to our previous inquiry (copy enclosed) regarding the year-2000 compliance status of your software product(s) described therein.

Your delay in providing the information we need is unacceptable and is costing our company the critical time is needed to complete our year-2000 project. In addition to facing an immovable deadline, we have customers that are demanding our response to their year-2000 questions. We risk losing customers over this issue and will not tolerate further delays from your company.

Please fill out the checklists that we once again have provided, and return them to the address indicated. If you fail to complete each checklist in its entirety and return it to us within two weeks of the date of this letter, we will be forced to consider alternative software products, and possibly involve our attorney in this matter.

Sincerely,

[executive name]
[title (preferably a CEO, CFO, CTO, president or partner)]

enclosures

Basic Vendor Inquiry Form Letters

The following model business letters are reprinted with permission from Y2K Experts and are provided to assist members in querying their vendors and others regarding Y2K compliance. These generic letters should be adapted to the practice's specific needs and reviewed by legal counsel for conformity with jurisdictional requirements in the area where the practice is located.

Listed below are the sample letters provided in this guide:

Noncomputerized-Product Vendor – First Contact
Noncomputerized-Product Vendor – Follow-up

Property Manager – First Contact
Property Manager – Follow-up

Utility Company – First Contact
Utility Company – Follow-up

A full listing of form documents available from Y2KExperts can be viewed at:
www.y2kexperts.com/certified_y2k_ready/formdocuments.htm

***Please Note**

If you make any changes to the documents before sending them, be sure to involve marketing, technology and legal professionals. Even subtle changes can impact the effectiveness of the documents.

Property Manager – First Contact

[date]

[contact name, if applicable]
[company name]
[address]
[city, state, ZIP]
[country, if applicable]

Dear Sir or Madam [or contact name]:

The year-2000 computer date problem (description enclosed) has received much press of late, and our customers have begun to question our ability to provide uninterrupted services up to and beyond the year 2000. As a result, we have begun the process of reviewing all of our internal computer systems and correcting all problems. But, this is not enough.

As a resident of the property located at [property description/address], we rely heavily on the systems that control elevators, heating and cooling, security, electricity, telephones, fire detection/prevention and all other essential functions. According to many experts, the computer processes that control systems such as these may be unable to correctly process after 1999. Since these systems are not under our control, we must rely on you to make sure that they are, or will be, capable of functioning without error up to and beyond the year 2000.

Before we can inform our customers that we will have no year-2000-related disruptions in service, we must receive the following from you:

- A list of all systems on the property that are controlled by computer.
- Your assurances that each system will function properly, without a year-2000 date-related error.

Our customers will not wait long for our assurances; therefore, we cannot afford to wait long for yours. Please respond to this inquiry within three weeks of the date of this letter.

Sincerely,

[executive name]
[title (preferably a CEO, CFO, CTO, president or partner)]

enclosure

Noncomputerized-Product Vendor – Follow-up

[date]

[contact name, if applicable]
[company name]
[address]
[city, state, ZIP]
[country, if applicable]

Dear Sir or Madam [or contact name]:

Our records show that you did not respond to our previous inquiry (copy enclosed) regarding the year-2000 (Y2K) compliance status of your company, and your ability to provide the product(s) upon which we rely. We must have your immediate response to this inquiry, because we cannot assure our customers of our own year-2000 compliance without it.

To guarantee our customers uninterrupted service, we must use products supplied by vendors that are also Y2K-Ready. Please respond to this inquiry within two weeks of the date of this letter, or we will be forced to find another source for the product(s) you provide.

Sincerely,

[executive name]
[title (preferably a CEO, CFO, CTO, president or partner)]

enclosure

Utility Company – First Contact

[date]

[contact name, if applicable]
[company name]
[address]
[city, state, ZIP]
[country, if applicable]

Dear Sir or Madam [or contact name]:

The year-2000 computer date problem (description enclosed) has received much press of late, and our customers are questioning our ability to provide uninterrupted services into the new millennium. As a result, we have begun the process of reviewing all of our internal computer systems and correcting all problems. But, this is not enough.

Your company's ability to provide us with [utility type] is critical to our conducting our daily business. To guarantee uninterrupted service to our customers, we require your assurances that your company will be Y2K-Ready (able to deliver services, without interruption, up to and beyond the year 2000).

Our customers will not wait long for our assurances; therefore, we cannot afford to wait long for yours. Please respond to this inquiry within three weeks of the date of this letter.

Sincerely,

[executive name]
[title (preferably a CEO, CFO, CTO, president or partner)]

enclosure

Property Manager – Follow-up

[date]

[contact name, if applicable]
[company name]
[address]
[city, state, ZIP]
[country, if applicable]

Dear Sir or Madam [or contact name]:

Our records show that you did not respond to our previous inquiry (copy enclosed) regarding the year-2000 compliance status of your systems on the property(ies) described therein.

We have had a good business relationship with you in the past and look forward to continuing that relationship. However, if your systems will not be capable of functioning normally as a result of the year-2000 computer date problem, we must know that immediately. Changing locations will place a large burden on us and, if necessary, is a process that we must begin now.

We must have your immediate response to this inquiry, because we cannot assure our customers of our own year-2000 compliance without it. Your failure to respond promptly to this inquiry may hurt the relationships we have with our customers and may damage our business. If you do not contact us within one week of the date of this letter, we will be forced to consider involving our attorney in this matter.

Sincerely,

[executive name]
[title (preferably a CEO, CFO, CTO, president or partner)]

enclosure

**SELECTING A SOFTWARE SYSTEM
INFORMATION PACKET**

Product # 410702680

SELECTING A SOFTWARE SYSTEM: INFORMATION PACKET

Updated March 1999

Enclosed is your order for ACP-ASIM's Selecting a Software System information packet.

This packet includes a list of directories of software products, resources for obtaining software evaluation tools, checklists and medical software reviews, plus informative articles and web sites pertaining to this topic.

Also enclosed is ACP-ASIM's guide, "Choosing The Right Computer System For Your Practice." This guide lists steps to consider in planning and evaluating a computer system for your practice.

In recent years, the medical practice software industry has undergone significant developments which will influence your choice of software: 1) consolidation of numerous smaller practice management software vendors into a reduced number of large national vendors, 2) substantial standardization of basic features offered by major practice management systems, 3) emergence of small network, off-the-shelf, practice management systems selling for under \$2000, and 4) continuous advancement of electronic medical records systems to the stage where they now constitute a practical option for many private practices.

The packet is designed to save you time in defining your primary software needs and then locating resources to help narrow the selection of products. Ultimately, however, you should talk with other users of the software in which you are most interested and ask for demonstrations of its performance using real data.

We hope that this information proves helpful. You may also order our related "Electronic Medical Records Background Information" packet by calling ACP-ASIM customer service (800)523-1546 ext. 2600, or downloading it from www.acponline.org/cca. The Center for a Competitive Advantage is a trusted source of assistance helping member internists improve all aspects of their practices. If you have further questions concerning computer system selection, please call (800) 338-2746 extension 4553.

Acknowledgements

The American College of Physicians - American Society of Internal Medicine would like to thank all of the publications that permitted the reproduction of their articles.

"Will the Y2K Bug Force You To Replace Your Computer" ACP-ASIM Observer. March 1999.

"16 Questions To Ask When Buying a Computer System." Provided by Debra C. Cascardo Weissman. Cascardo Consulting Group, White Plains, NY. (914) 696-3400.

"With no perfect computer systems on market, practices 'Making Do.'" Physicians Financial News. August 15, 1997. p. S34.

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Medical Group Management Association (MGMA)

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The 1997 *Guide* provides a detailed independent analysis of ten products, which CTS identifies as the leading medical practice management systems:

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R/2000 (Reynolds & Reynolds)	MedAssist (Professional Software Solutions)

* The 1999 *Guide* is expected to be published in May, 1999 and will cover three additional systems: Practice Partner, Pipeline, and Advantx.

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CHOOSING THE RIGHT COMPUTER SYSTEM FOR YOUR PRACTICE

A guide by ACP-ASIM

This ACP-ASIM practice management guide is designed to provide internists and their staff a check list of steps to consider in planning and evaluating a computer system for their practice.

Know your practice style, how your business office operates and what you hope to gain from your computer in the future.

Survey the office and determine what you presently have as "systems" or procedures.

- Anticipate the number of physicians and staff you expect to be in the office, as well as the number of offices you may expect to open. Determine the number of patients, especially actives, and their sources (HMO, private, referrals) you anticipate based on current growth.
- Are you doing billing manually?
- Are you under capitation or prepaid agreements?
- Are you required to communicate electronically to a managed care or insurance organization for claim submission, encounter submission, eligibility inquiries or authorization/referral actions?
- Determine the approximate volume of insurance claims filed and the average turnaround time for payment.
- Estimate the person-hours required in daily/monthly posting of charges and payments. What is the percentage of aged accounts receivable in 30-day

intervals?

- Are you interested in having on-line computerized medical records?
- Will you be using an office lab and do you want it connected electronically to your computer system for automated access to results? Ditto for a reference lab?
- Will you want telephone access to your computer system from off-premises?
- Do you plan to create desktop publishing documents for your patients' education and your staff's training?

Do a needs analysis of the practice.

Compare the advantages and disadvantages of having a computer perform individual functions like accounts receivable, medical records, electronic billing, etc.

- Advantages: faster payments, better access to patient data for preventive medicine and risk management, better patient education and compliance, streamlining of menial office tasks.
- Disadvantages: some computer applications are far from perfect and expensive; some vendors understaffed or incompetent; time required to establish and maintain computer procedures; retraining costs.

Determine what additional requirements (such as phone lines, power outlets, cables and connectors and hours per staff member of training) will be necessary. Will nurses be able to access confidential information or just physicians?

Decide what types of paper reports you want from a computer system (problem lists, visits due, missed appointments, payroll checks, accounts receivable, etc.).

Mentally walk through a patient's visit to your office and determine where you are wasting time and find out what are the most prevalent patient complaints. Make a list to discuss with potential vendors. Ask how they would address each problem.

Establish financial parameters.

If you plan to computerize a function for the first time, complete a cost-benefit analysis to determine if doing so is worth the expense. Define the costs you will incur in purchasing what you have decided you need versus the benefits or savings (mainly dollars and time) once it is running.

Consider other costs such as supplies, insurance, hardware and software maintenance and utilities. Will you gain increased practice efficiency and safety by being able to process clinical data like prescriptions, preventive medicine reminders and the like by computer?

Decide how large a computer system you really need.

The needs analysis and financial parameters you have set will help you determine the type and amount of hardware and kind of software your practice needs now and for the future. Based on the number of patients you see (i.e., per week) and the number of financial, medical record, and inventory transactions your staff makes, you can determine how much hardware you need and which software applications are necessary.

Hardware is always a major consideration, but it has become a manageable concern since hardware prices have dropped significantly, and you can lease-purchase equipment at reasonable rates. Many state medical societies and local hospitals also offer leasing and purchasing arrangements.

Some, not all, systems become obsolete very quickly; so you must be careful in choosing your hardware and operating system so that you don't get "locked out" down the road. As long as you buy hardware that is middle of the road, modular and expandable, you should not have many problems later.

Hardware requirements vary depending on the software system. Look to the vendor for advice and specifications concerning hard drive, RAM, cache, mega hertz, video cards, monitors, printers, back up, etc. needed for the vendor's system.

If your practice does not have sophisticated requirements, you may be able to save on both hard and software by selecting a less complex software system.

If you consider mail ordering your hardware, be sure the company is national, reputable and has been around a long time. The lower prices for hardware found in mail order catalogs are usually because the company has a high volume of purchases. But beware! Generally you should buy both your hardware and software from the same reputable local vendor, or at least get a maintenance contract covering both from the same vendor. If you have a computer breakdown and have bought hardware and software from different sources, rest assured that the hardware dealer will blame the software, and vice versa. Also take caution with software vendors who offer hardware "deals," which may not be such good deals when carefully examined. Shopping the mail order and discount stores will give you valuable pricing information to use later in bargaining with your system dealer to get reasonable rates on both

hardware and software.

Determine the software functions you need.

The cost of software will vary depending on what you want -- billing, scheduling, patient records, CPT and ICD-9 coding, drug interaction/information, electronic claims submission. Systems designed for large practices usually are considerably more complex and expensive than what small practices need or can afford.

Most physicians also use their computer systems to submit claims electronically to insurance carriers. Most new software billing systems include electronic claims submissions capability. If not, many Medicare carriers across the country supply free claims submission software to providers, and there are companies selling software packages for this purpose.

Another option is to use one of the companies that offer their services to bill electronically to Medicaid, Medicare and the larger carriers in your area. The prices per claim vary, and you should get bids from at least 2-3 before making a decision. Compare the cost over time to what you would pay for software equipment and staff to submit the claims yourself.

Electronic medical records systems are now coming into their own. They may offer a wide variety of additional services, including drug interactions, coding assistance, patient scheduling, E-mail, referral management, ordering, pharmacy refills, etc. But be careful to determine that the company will be around for a while and has some track record, that the format for charting is intuitive to you, and that the records system will effectively interface with your billing system. You also need to distinguish what services offered are actually available now rather than planned, and which are merely shells for data bases you must supply, insurance plan specific formularies and other requirements.

Establish product evaluation criteria.

When you consider computer systems, first select the software, then the hardware. Be sure to consider reliability, ease of use, data entry, presentation and accessibility, compatibility with other software like word processors and operating systems, flexibility (how easy is it to update and customize software and who can do it), and ability to link up with other systems, for instance at home or at the hospital.

Approve and select a list of computer vendors.

Use written criteria to determine which computer vendors you will want to do business with. These criteria based on price, expansion, compatibility with other software systems, service and support, warranties, etc., can determine your initial list of vendors to consider and evaluate.

Check directories of available software. Each company publishes a number you can call to get a list of the dealers in your area. Read reviews of the software.

Develop your RFP.

Develop a request for proposal (RFP) based on your criteria. Be specific in your written RFP as to what you want the system to do and what you expect of the vendor. Include detailed information from the list you made.

You may receive demonstration disks in the mail along with the proposals. If the disks allow you to actually enter and retrieve data -- many don't -- use a checklist of desired features to see if the software does what you want it to do with few hassles. If it works, examine the software and see just how easy it is to use it without any training. This will give you an idea of just how much training will be necessary for you and your staff.

Evaluate proposals and request hands-on demonstrations from vendors.

Ask for at least 5 references in the area who are physicians in practices similar to yours and use the same version of the system you are evaluating. You should call each of them and ask how they like the system and what problems they have had with the vendor, if any. Try to speak with those individuals in the practice that work directly on the system. They can tell you best what problems they are having in everyday use of the system.

Research each company's history, financial stability, track record of adapting their product, apparent technical and other ability to survive over the long term in this rapidly changing market. No matter how appealing it may be today, you do not want to get stuck with a product that will stop evolving or not be supported by its company in the future.

Select 3-5 vendors to give you and your staff hands-on demonstrations in your office. Have a check list in hand of the key features you want to see the vendor demonstrate. Ask to see step-by-step how specific functions are performed, ideally using your own practice data. Do not let the vendor show you "idealized" cases or show only those features the system handles best. You want to see its weaknesses. Also force the vendor to distinguish features the system currently offers from those that are "coming" or "planned".

After your demo, try to set up site visits to those practices which have the systems you are particularly interested in. Observe whether the system has trouble handling a full practice work load. Does navigation of the system become clumsier and the processing response time slower compared to the idealized demo?

Consult with outside professionals like medical practice management consultants and accountants as appropriate. Attend national or state meetings offered by ACP-ASIM, etc.

There are often exhibits and/or demonstrations sponsored by a variety of vendors. Evaluate each system demonstration and select a vendor.

Sign the contract and purchase the computer system.

Before signing any contracts, contact your legal counsel to determine if all problems have been anticipated and addressed in the paperwork. Make sure the contract clearly spells out the vendor's responsibilities, especially service, support, and upgrades to the system (whether they are due to your wishes or government regulations).

- Be sure there are no costs that do not appear in the written part of the contract.
- Do not rely on oral promises or guarantees. Write down everything the vendor promises, get him to initial as validation and be sure all these claims are spelled out in the contract.
- Ask the vendor about specific clauses you are having difficulty understanding.
- Discuss terms of payment, delivery, return policies and arbitration rights.
- In negotiating a warranty, insist on a 30-day, no questions asked, money back guarantee on all hardware. Warranties usually last six months to one year.
- Sign up for a service and upgrade agreement also. Programming and debugging is highly labor intensive, intuitive work and it is expensive.
- If a problem is identified, a service response should be available within one hour. Determine the cost and nature of after hours and onsite service versus telephone help. Try to have hardware and software covered by the same vendor. If not, you must determine in

advance how the division of responsibility will be determined when a problem arises. Also ask for service language that precludes the vendor from shifting responsibility to the electrical or telephone system in your building. There should be plans for loaner components if repairs are required.

- Read EVERY item. Do not skim the contract.

Install the computer system in your office.

Be sure to allow ample time for the vendor to install the system in your office. Data conversion, staff and physician training, debugging and full operation may take longer than you imagine (anywhere from 1-4 weeks). Be sure to discuss this with your vendor prior to installation; so that you won't disrupt your practice.

Work closely with the vendor to develop a detailed plan and flow chart covering all aspects of implementation, including a specific time table for scheduling cabling, hardware, training, software, and data conversion. Find out precisely what will be required of your practice for each of these key steps.

Cabling is relatively inexpensive, and easier if done in one visit, so be sure to put cables anywhere you might install a PC or a printer later, such as provider areas, the lab, an extra one at each receptionist, one or two extra in the business office and the like.

Train your staff.

Your staff should understand the components of the computer system thoroughly. This includes the operating system, and hardware as well as the software. Knowing how the system works will help your staff feel in command rather than slaves to the system. Be sure the vendor helps your staff customize the software to your office's specific needs.

Training by the vendor should include:

- File storage on disks
- Use of directories
- Use of keys
- Back-ups
- Printer commands
- Modem operation
- Cable connections
- Common error messages
- Power surges
- Keyboard and screen freezes
- Data entry
- Data editing
- Data retrieval
- Report generation
- Menus and passwords
- Logging on and off
- System management and maintenance

Be sure you encourage your staff to take notes on these things and then incorporate them into fact sheets at each terminal. Make sure that all support and supply telephone numbers and contacts are also posted.

Evaluate the performance of the system.

It is important that you continue to monitor the performance of the system to let the vendor and other suppliers know about your service, maintenance and expansion needs. Meet frequently with your staff in the first couple of months to determine if things are running smoothly.

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October 1998

ACP-ASIM Observer

Will the Y2K bug force you to replace your computer?

Tips to determine how the year 2000 problem will affect your practice's ability to conduct business

From the March 1999 *ACP-ASIM Observer*, copyright © 1999 by the American College of Physicians-American Society of Internal Medicine.

By Carl Cunningham, MBA

If you haven't prepared your practice to handle the year 2000 computer problem, you now have two things to worry about: not only is there a chance that you have to replace, rather than fix, your computer system, but time to do so is running out.

While the problem, frequently referred to as the Y2K or millennium bug, is expected to affect computing devices throughout health care, it will hit physicians the hardest by crippling practice management software. If you think that the worst thing the Y2K bug can do is cause your bills to go out misprinted "Jan. 1, 1900" instead of "Jan. 1, 2000," think again. Experts say that when a computer reads "1/1/00" as "Jan. 1, 1900," it could get confused, shut down and possibly even refuse to reboot.

At that point, with no access to your accounts receivable, how will you bill your patients and third-party payers, or even know which payers owe you? Without access to patient schedules, how will you know which patients are coming to see you the next day and what slots are available for future scheduling? Obviously, your cash flow and office operations could be seriously disrupted.

If you don't already know whether your existing practice management system can be made Y2K compliant, call your vendor. If you have minimized your practice's expenses by retaining an older computer system and/or by deferring the purchase of software upgrades, your system may not be Y2K compliant. Recognize that as late as 1997, a number of vendors were still selling expensive software that was not Y2K compliant. Physicians have taken at least two of these vendors to court to address the problem.

If your vendor can supply you with a "patch" to fix the Y2K problem, order one right away. Backlogs for these retrofits could develop by midyear as practices rush to get them. Some vendors are exploiting this situation by charging thousands of dollars for Y2K compliance packages. Worse yet, there may not be Y2K compliance retrofits available for many older systems, whose original developers have gone out of business or been acquired by large national firms that don't want to support older products.

If you own one of these phased-out "legacy" systems, you may have to replace your hardware as well as your practice management software. Even if you can fix your existing system, it may be more cost effective to buy a modern system that gives you greater functionality.

Unfortunately, time is quickly running out to make such a complex purchase. With literally hundreds of systems to choose from and a flood of end-of-the-millennium orders, it will probably take longer than the usual six to nine months to select and install a new computer system. As a result, the longer you wait to start the selection process, the greater the risk that the vendor you pick will be too busy to install your system before Jan. 1, 2000. Some analysts predict that backlogs for new systems will start to develop this spring, so you should start your search immediately.

Smaller practices may be able to opt for "off-the-shelf" products that you can use to replace your existing system. These low-end products typically sell for less than \$2,000, but they offer only bare-bones features and very basic billing and scheduling functions. That may be enough for small practices, however. These products may also prove to be the best—or only—option if vendors of high-end products can't deliver before Jan. 1, 2000.

The College can also help. Over the last year, articles about how to cope with the Y2K problem have appeared in both the *ACP-ASIM Observer* and *Today's Internist*, and another comprehensive article is planned for the next issue of *ACP-ASIM Observer*. (Go to ACP-ASIM Online at www.acponline.org for back articles from either publication.) In addition, the College's Center for a Competitive Advantage has developed an information packet, "[Selecting a Software System](#)," which is available on the College's Web site and through ACP-ASIM Customer Service (800-523-1546, ext. 2600, or 215-351-2600, 9 a.m. to 5 p.m., EST).

The College is also developing new guides, checklists and scorecards to help members evaluate, compare and select Y2K-compliant practice management and electronic medical records software. Look for these and other tools on ACP-ASIM Online in the "Computers in Medicine" section. Finally, members can call the College's Medical Informatics Department (800-523-1546, ext. 2572) for more information about Y2K compliance issues and the Center for a Competitive Advantage (800-338-2746, ext. 4553) for information about purchasing a computer system. *Carl Cunningham, MBA, is Director of the College's Center for a Competitive Advantage.*

Government to doctors: time to get office systems Y2K compliant

The federal government is turning up the heat to encourage physicians to make their office systems Y2K compliant.

As part of its Y2K efforts, HCFA has instructed its Medicare carriers to reject electronic claims that do not use a four-digit number to indicate the year beginning April 5, 1999. In a Jan. 13 letter, HCFA directed its carriers to return to provide claims that use the older two-digit format. Computer systems can misunderstand two-digit dates on claims that describe years beyond 1999; that confusion is the heart of the Y2K problem.

Based on its current experience, HCFA believes that the restriction will immediately affect only a small percentage of Part B claims. Many physicians submit their claims through clearinghouses or other electronic intermediaries, which already correct date formats. College officials are concerned, however, that physicians getting help from these services may mistakenly believe that their systems are Y2K compliant because HCFA and other payers are able to process their claims. The problem is that these services will be unable to work with physicians using non-Y2K compliant systems starting Jan. 1, 2000.

HCFA had previously said that it would require claims to be Y2K compliant by Jan. 1 of this year but then extended its deadline to give providers more time to prepare. For more information about the change, contact your Medicare carrier.

In another year 2000 development, the government will hold its second "Y2K Action Week" March 28 through April 3. The goal of the event is to raise public awareness about Y2K issues and to alert community organizations to prepare their systems for the new millennium.

The week will focus attention on institutions and organizations in 25 different business sectors ranging from banking to food service to health care. During the week, members of the press in local communities are expected to talk to members of these industries, including physicians, about their plans for dealing with Y2K issues.

HCFA officials are encouraging physicians to prepare to answer questions that reporters and patients may ask. Officials say that physicians should be able to answer detailed questions about how they have prepared their office systems—including computerized records systems, billing systems and appointment scheduling systems—to handle year 2000 problems.

16 Questions To Ask When Buying a Computer System

Developed By: Debra C. Cascardo Weissman

- 1) Batch-data entry capabilities:
 - Can you post a batch of transactions at once?
 - Can you post multiple items on one account at the same time?
- 2) Menus:
 - Are there key words or hot keys that allow access to different functions without paging through menus?
- 3) Commands:
 - How complex are the commands to execute functions?
 - Are cheat sheets taped to the computer which users must rely on?
- 4) New account set-up time:
 - How long does it take?
- 5) Name and number look-up:
 - How fast can you find a patient number?
 - Can you find the name by looking up the number?
- 6) Manuals:
 - Are they simple to read and understand?
- 7) Training:
 - In your office?
 - Additional Training for new staff?
 - Immediate support for questions?
- 8) System backup time:
 - How long does it take? (Daily backup is important; if it takes too long the operators will avoid doing it.)
- 9) Extra features:
 - Do you need them?
 - Will they really save time or money?
 - Do they save a problem?
- 10) Interruptions:
 - Can you interrupt posting to look up another account?
- 11) Deletions:
 - Can old accounts be deleted?
- 12) Passwords:
 - Can you restrict access to different parts of the program?
- 13) Service:
 - How often?
 - How quick?
 - How much?
 - Is there a service contract available?
 - Does it include upgrades?
- 14) Updates:
 - How often has the system been updated?
 - When was the last update?
 - When is the next one expected?
 - What new features will it have?
 - Will you automatically receive the update?
 - Can you purchase the update at a reduced rate?
- 15) Managed care reports:
 - Can it produce the necessary reports?
- 16) Software:
 - What software does the package include?
 - What is available at extra cost?

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With No Perfect Computer Systems On Market, Practices 'Making Do'

BY EMILY PAULSEN
Contributing Editor

Despite new developments in electronic medical records, voice recognition software and telecommunications, many physicians in small, private practices are putting off major computer purchases. Instead, they are sticking with their current systems, contracting with outside billing services or putting together their own makeshift systems.

"I don't see a lot of people making big purchases right now," says Stan Schulman, consultant with Medex Billing Associates in White Plains, N.Y., reseller for Medical Manager, one of the most popular practice management packages. "People are going to stay with what they have or just upgrade. They'll make a \$2,000 or \$3,000 purchase, but you don't see many people looking at \$20,000 or \$30,000 systems right now."

Several factors contribute to physicians' hesitation to embrace new technology. First, medicine itself is in a state of flux. Managed care has yet to reach all corners of the country—but many predict it will in the years to come. And with hospitals and other organizations in the market to buy practices, it is difficult to plan for the future.

No Perfect Package

Change seems to be the hallmark of the computer industry, as well. Although electronic medical records, voice recognition and telecommunications capabilities have come a long way, the shake out will continue for the next few years, consultants say. Software companies are working hard to develop the perfect package that integrates billing, medical records, electronic, claims, scheduling, voice recognition and other functions, but the pieces are not in place for this type of program.

"Everyone's looking for the perfect patient chart that fuses it all together," Mr. Schuhman says. "A lot of people are working hard to develop it. But I haven't seen anything beautiful yet."

The changes in the healthcare arena have also affected the software companies that serve medical practices. There used to be a natural segmentation of the practice management software market. Companies like IDX appealed to larger organizations, such as hospitals. Smaller practices looked to packages like Medical Manager. As practices grow and merge into larger organizations and hospitals move into outpatient care, that natural division has dissolved. Companies like IDX and Medical Manager are now direct competitors for new contracts. This change in orientation is bound to have some ramifications in the years to come.

Another factor is the new millennium. The software in most physicians' offices can not cope with the year 2000. And even some of the software on the market now is not fully "year 2000 compliant." Many practices are relying on their current vendors to get them into the millennium without incident.

But they may not like the solutions their vendors offer. For example, Mr. Schulman says that Medical Manager has yet to release their 2000 edition and when it does, the company may force its users into a several thousand dollar upgrade. Some practices may opt to jump ship rather than shell out the money to upgrade—especially considering other obstacles to computerization.

Just because computers have the capability to do something does not mean it will all go smoothly. Physicians want computers that solve their problems, not add to them. The lack of standards for such things as electronic claims certainly does not help. Although insurance companies accepted the ANSI 837 standard a couple of years ago, HCFA 1500 is still in wider use. But even that form is not used uniformly. "Electronic claims are actually getting more complicated in some cases," reports Mr. Schulman. "There's a standard form, but you fill it out differently in each state."

In fact, when Mr. Schulman tried to help his father with billing for his obstetrics practice in Florida, the first batch of claims all came back rejected. "I had filled them out like I do for my clients in New York State," he says. "Florida wanted them done differently."

For practices that see patients from several states, dealing with these differences can get frustrating.

Another obstacle is the frequent turnover of office staff in medical offices. To many, it seems that just when an office manager or billing clerk gets the hang of using the computer to fill out claims, they move on to another job. The cost of their training—and the value of their on-the-job experience—goes with them.

As a result of these frustrations, some practices have given up on computers altogether and signed on with billing services. Outside medical billing services have become the number one home-based business in the United States. Surgeons, anesthesiologists and others who do not have a full-time office or staff are most likely to outsource billing. Older physicians, nearing retirement, who do not want to make an investment in computers, may also opt for a billing service.

But for office-intensive, primary-care practices, such as internal medicine, family practice and obstetrics, outsourcing is not a practical option. It does not make sense to pay a billing service a dollar or more to process a claim for \$30.

A lot of these practices find that, instead of buying an all-inclusive, networked practice management package for thousands of dollars, they can do better by piecing together their own "system" of stand-alone computers. Although these non-networked offices may run counter to computing trends, many practices are finding this stop-gap measure is just what they need to take advantage of technology without breaking the bank.

For example, they may purchase a stand-alone billing package, such as MediSoft or MedWare, for a few hundred dollars. These Windows-based packages may not offer extensive networking capabilities or electronic medical records, but they serve the billing functions of an office efficiently and inexpensively.

If the office wants to add other capabilities, they often do so by buying another stand-alone computer that is used mainly for that function. "The price of computers has come down to the point where practices can afford to buy a computer just for certain tasks," Mr. Schulman says. For example, as more payers offer eligibility information, claims tracking and eventually claims submission over the Internet, offices may purchase a computer with a high speed modem for Internet access.

Then there are those physicians that are heading into the 21st century with no holds barred and no regrets. They are putting networked computers in their business office, examining rooms and on their own desktops. They have integrated computers into every part of their practice of medicine. And they find that they can serve their patients better and achieve a more satisfying balance between career and family.

For Dr. James E. Palen, a family practitioner in Cape Girardeau MO, computerization helps him maintain a successful and fulfilling medical practice in the face of managed care and lower reimbursements. He retired his paper files in 1993, converting completely to an electronic medical records program that he developed with his son. Using a handheld computer, he fills out the electronic medical record while he talks to his patients.

The goal, he says, is to have the record complete when he walks out of the examining room. The record can then be used to generate a bill or a claim form. Dr. Palen believes that his system can trim five minutes from each patient encounter—making his practice profitable in fewer hours.



Tips on Selecting a Computer System to Manage Managed Care

Debra C. Weissman, M.A., M.P.A.*

ABSTRACT

In today's managed care environment, medical practices must have a computer system and software that offer extensive information capabilities, flexibility, and control. This article provides an overview of the essential and desirable features of such systems and software. In effect, it can be used as a checklist of questions to use in evaluating software for its ability to manage contracts, track capitation payments, customize referral forms, track members, and more.

Key words: Computer systems/software; contract management; capitation.

INTRODUCTION

Joining a managed care plan forces you to face greater risks and generate more paperwork than ever before. As a result, closely tracking information about your practice as well as streamlining the paperwork are extremely important. To thrive in today's managed care environment, you must have a computer system that gives you flexibility and control. Information is power in the new health care world. Insurance companies have MIS experts. With the right computer system, you, too, can create reports on the demographics of your patient population and practice utilization. These will help you to negotiate the best contract terms. Your computer reports will also let you determine which aspects of your practice are the most economically sound without sacrificing quality and alert you of areas requiring revisions.

If you have a system, consider upgrading it. If you do not have a computer, get one NOW. You should look for the following basic features in a computer module to help you take control of managed care in your office.

MANDATORY FEATURES

The following features should be considered as mandatory. The software should:

- work with all managed care situations, including primary and specialty care;
- use electronic data interchange (EDI) technology;
- provide detailed managed care reports;
- manage all aspects of managed contracts;
- provide full referral management with customized referral forms;
- post capitation payments; and
- maintain membership logs.

REFERRAL MANAGEMENT

Ideally, the computer software also should allow three major types of referrals:

- primary care physician (PCP) to specialist;
- PCP to facility; and
- specialist to PCP.

Referrals can be issued for a specific period of time, dollar amount, number of visits, or treatment plan (specific procedures). Does the computer system allow for any combination of these plus general referral reasons and unlimited narrative notes?

Other features to look for in the referral management module include:

- System automatically checks the managed care contract and issues a warning when contract limits are exceeded;
- Lifetime, annual, and user-defined frequency limits for the contract may be defined for each contract;
- For easier referral entry, frequently used referral criteria can be set up as a standard referral and transferred to a new referral at any time;
- Referrals that require authorization should be tracked and the user alerted when an authorization is required; and
- During the referral process, the system should automatically maintain the status of the referral (i.e., new, authorized, in progress, or closed).

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MANAGED CONTRACTS

The computer module should offer flexibility in defining plan contracts. For each contract, the system should allow inclusion of approved physicians, approved physicians by specialty, approved facilities, allowed procedure codes, allowed diagnosis codes, or any combination of these. In addition, preauthorization for services should be defined as "required," "recommended," or "not required" depending on the following criteria: physician inside or outside the plan contract, physician approved by specialty, facility inside or outside the plan contract, and inpatient or outpatient treatment. In addition, look for these capabilities:

- User-defined limits by dollar amount or number of visits can be set up for each plan's managed services.
- System should store projected values for dollars per visit, per limits, per 1000-member month, and per referral; these projected values can be used to compare the practice's actual performance and the plan's expected utilization.
- Each contract allows a separate schedule of approved amounts to be used for plan referrals or specialist referrals or for PCP payments to the specialists.

CAPITATION PAYMENTS

Capitation payments should be posted directly to the system. Payments should be tracked by member count and distributed across multiple physicians. Each payment should be able to be posted using a user-defined type (e.g., membership, retroactive, bonus). When the payment is entered, a date should be required that will allow tracking the membership dates the payment covers.

With the right computer system, you, too, can create reports on the demographics of your patient population and practice utilization.

CUSTOMIZED REFERRAL FORMS

Look for software that allows customization of the second page of referral forms. This will enable each plan to have its own form(s).

MEMBER TRACKING

The software should be able to maintain a list of each plan's members. For each member, the system should track membership ID number and start and termination dates. There should be an option to update manually or through an EDI network that communicates directly with the authorizing agency.

USING DATA TO COMPETE IN MANAGED CARE

In addition to helping you manage your office, your computer system can give you an edge in negotiating managed care contracts. Information regarding your patient demographics can provide valuable perspectives on your practice. Items as diverse as age and zip code can lend insight into your patients and how sick you can expect them to be. The data can help you evaluate managed care contracts and better negotiate with the plans. You will know where your practice income is generated and can determine how managed care and capitation rates will change that income. In other words, the data will allow you to judge if the increased number of patients will compensate for the probable decrease in allowed fees.

The computer module should offer flexibility in defining plan contracts.

As an extra point, just having precise data on your patients and treatment plans will also convince the managed care plans of the efficiency of your practice. By properly pulling data into reports, you can show:

- procedures usually performed for each diagnosis;
- treatment plan patterns for each physician in the practice;
- age, sex, and location of patients for each diagnosis or treatment code; and
- amounts billed and allowed for each diagnosis and its treatment plan.

PREPURCHASE ISSUES AND QUESTIONS

Ask the vendor to give you a demonstration in an office that is the same specialty as yours and equipment comparable to what you are considering. An actual database may not behave flawlessly. Use a company that has been in business for 5 to 10 years. Ask for resumes on their key employees. How much turnover is there in the technical support department? How experienced are their tech support representatives? Ask the actual users and operators about the system's strengths and weaknesses.

Also, consider asking about the following:

- Batch-data entry capabilities: Can you post a batch of transactions at once? Can you post multiple items on one account at the same time?
- Menus: Are there key words or hot keys that allow access to different functions without paging through menus?
- Commands: How complex are the commands to execute functions? Are there "cheat sheets" taped to the computer that the users must rely on?

- New account set-up time: How long does it take?
- Name and number look-up: How fast can you find a patient number? Can you find the name by looking up the number?
- Manuals: Are they simple to read and understand? Are they clearly organized? Is there a page or section devoted to the most common questions?
- Training: Will they train in your office? Do they offer additional training for new staff? Is there immediate support for questions?
- System backup time: How long does it take? Daily backup is important. If the time is too long, the operators will avoid doing it.
- Extra features: Do you need them? Will they really save time or money? Do they solve a problem?
- Interruptions: Can posting be interrupted to look up another account?
- Deletions: Can old accounts be deleted? Can accounts be deleted even with an open balance?
- Passwords: Can access to different parts of the program be restricted?
- Service: How often? How quick? How much? Is a service contract available? Does it include upgrades?
- Updates: How often has the system been updated? When was the last update? When is the next one expected? What new features will it have? Will you automatically receive the update? Will you have the opportunity to purchase the update at a reduced rate?
- Managed care reports: Can it produce the reports we mentioned?
- What software is included in the package? What is available at extra cost?

NEGOTIATE

You will be making a substantial investment in your practice when you purchase a new computer system or update your present system. You negotiate when you lease a car, why not when you lease or buy a computer? Remember: Determine your needs—those for the near future as well as current ones. Deal with reputable professionals and make sure training and support are available. ☐



Selecting practice management information systems

by Robin Worley and Vincent Clotti

Abstract

Key words: management information systems

Despite enormous advances in information systems, the process by which most medical practices select them has remained virtually unchanged for decades: the request for proposal (RFP). Unfortunately, vendors have learned ways to minimize the value of RFP checklists to where purchasers now learn little about the system functionality. The authors describe a selection methodology that replaces the RFP with scored demos, reviews of vendor user manuals and mathematically structured reference checking. In a recent selection process at a major medical center, these techniques yielded greater user buy-in and favorable contract terms as well.

remendous strides have been made in practice management information systems over the past few years, with such new developments as electronic charting, voice recognition and optical imaging adding new dimensions to what used to be simple physician billing systems. Modern technology, such as RISC-based minicomputers and client server architecture, have ushered in a new era in price/performance for hardware, while electronic charting and managed care applications are pushing the software envelope. However, the process by which most medical practices evaluate and select among competing practice



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management information systems is still as old as keypunch card systems of the 1950s.

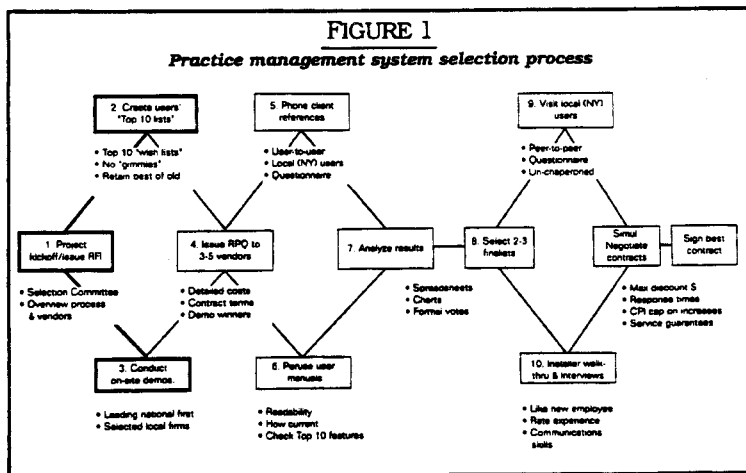
The request for proposal (RFP) is the dominant tool by which most practices and consulting firms evaluate potential new systems today, practically unchanged from the 1960s when physicians first utilized computers. The RFP is comprised primarily of a feature checklist, whereby vendors are asked to answer an elaborate series of questions about their systems' functionality, with the vendor who answers the most "yes" responses usually being the winner. The problem with RFPs is that most modern systems enable vendors to answer "yes" to 98 percent or more of the feature checklist, through such creative tools as report writers and screen generators. In addition, most consulting firms have developed "boilerplate" RFPs, to which vendors respond with "boilerplate" proposals, neither document reflecting many of the unique characteristics and requirements of individual practices. Lastly, the semantics involved in the wording of RFP questions is hardly fool-proof, leading to frustrating "I

thought you meant..." discussions, whether in or out of court.

This article describes how our organization selected a new practice management information system in 1996 by using an approach that totally bypassed an RFP, yet enabled us to acquire a state-of-the-art system at a very competitive price. This new process enabled the actual users of the new system to evaluate systems through such techniques as structured system demos, reference checking and perusal of vendor-user manuals, rather than relying on RFP checklists alone. The result was not only a more accurate rating of products, but tremendous "buy in" by the end users, which is the best preparation for an effective implementation.

Background

Manhattan Management Services Inc. (MMS) is a practice management corporation owned by the Department of Medicine at St. Luke's-Roosevelt Hospital located in mid-town Manhattan. MMS provides billing services for 350 physicians affiliated with the hospital, with annual revenue in the tens of



millions of dollars. Like many practices, MMS has seen its services gradually evolve from simple billing services into more of a management service organization, as member physicians reacted to the impetus of managed care. They began requesting increased assistance in negotiating contracts with HMOs, cost accounting, office scheduling and even computerized charting.

MMS had been using a billing system that was relatively robust when originally purchased for billing automation in the early 1990s, but the product had been sold to a new vendor, who announced plans to discontinue it within a year. Service and support were slipping rapidly and there was little R&D being committed to meet managed care requirements. Accordingly, MMS embarked on a search for a new system with several goals:

- to select a practice management information system from a leading vendor that would not likely be discontinued in the near future; to complete the selection process as rapidly as possible, so we could get off the old system before service deteriorated further; and
- to include functionality in new application areas, such as:

- managed care,
- office scheduling, and
- electronic charting.

A kickoff meeting was held in the fall of 1995, with a selection team representing users from various departments in MMS, including registration, charge entry, payment posting and controls, customer service and managed care.

Several physicians participated in the selection process as their schedules allowed, and representatives from the St. Luke's-Roosevelt Hospital MIS department also attended key sessions. The search for a replacement system was guided by the PERT (Periodic Evaluation & Review Technique) chart shown in Figure 1 (page 56), that outlined the detailed steps that MMS' selection team was to follow during the selection process throughout the six-month project. Each paragraph that follows is keyed to the PERT chart by the numbered boxes.

1. Issue request for information

This first step in the process consisted of issuing a request for information (RFI) or general questionnaire mailed to the "Top 10" practice management system vendors:

- national firms — leading vendors prominent throughout the country, such as IDX, SMS, CyCare, Medica and PCN; and
- local firms — with a strong presence in the New York area, which has several unique billing requirements.

The RFI asked each vendor to provide rough costs for their systems as well as key information about their firm, such as annual revenue and profitability, number of employees and number of clients, both in New York as well as nationwide. Thus, the RFI enabled us to narrow the field immediately to only those firms who could prove their financial viability, charged a reasonable fee and had a local presence. Interestingly, several vendors dropped out at this stage based on the questions in the RFI, saving themselves the marketing costs and ourselves the time and trouble of evaluating them further.

2. "Top 10" lists

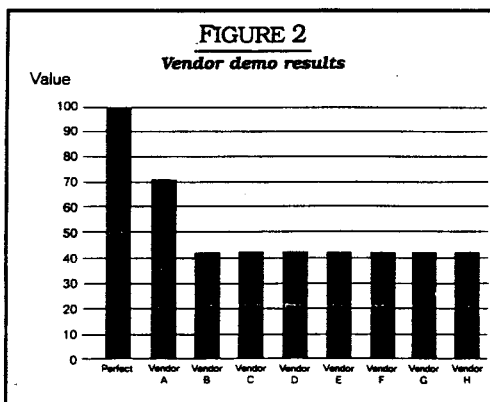
The second step in MMS' selection process was for each user area to list the top 10 features that their department required in a new system to increase productivity and reduce costs. Our consultant assisted by distributing samples from other practices, which all fit on a single page and included:

- Features that were being utilized from the old system which users did not want to lose; and
- Important features they desired in a new system, avoiding any "gimmies" like "on-line."

The lists were segregated by department and would serve as the basis for subsequent steps in the selection process, whereby users would telephone references, research user manuals and rate demos. The Top 10 feature lists replaced the bloated "feature checklist" of an RFP, but were scored by our own users to avoid the problem of over-zealous answers from vendor marketing representatives.

3. System demos

The next step in MMS' selection process was for the users to attend demonstrations of each of the



remaining vendors' systems at the practice, so each department could observe the system first hand. Each vendor was allowed one full day, with one to two hours per user area, to show their key features and answer questions.

Users rated such aspects of each system as user-friendliness, ease of screen navigation, report writers, among others, using a checklist provided by our consultant. The consultant scored the checklist and tabulated the results in a detailed spreadsheet. The demos not only allowed MMS users to learn about the state-of-the-art in contemporary practice management systems, but also allowed a ranking of each vendor's product according to the needs of MMS departments, using the standard questions as well as Top 10 features described above. The results of the demos are shown in Figure 2 (page 58).

The results of the demos were reviewed at a meeting with selected physicians and management of MMS and end users were given a chance to comment on each system. The results of the discussion with the users was that physicians learned in a brief meeting the net of a long and arduous demo process, and each person had their say, so any disagreements about vendors were aired openly. Based on the rough price quotes in the RFI and demo results, four vendors were selected to proceed with the next steps.

4. RPQ (request for price quotation)

After the system demonstrations, MMS issued a "request for price quotation" (RPQ) soliciting detailed price bids from the remaining practice management system vendors in a common format. The body of the RPQ explained MMS's current systems and general system requirements, and included several forms the vendors were to complete:

- A detailed cost breakdown was requested, including five pages on hardware, software and installation fees. The hardware and software costs were phased — that is, MMS would first replace billing and accounts receivable (Phase I), then

automate charting and managed care (Phase II);

- Client base — statistics were requested on the size of each vendor's client base by number of physicians, so MMS could ascertain the extent to which each vendor was committed to our large size and the unique New York market; and
- User manuals — were requested, so MMS users could review both the quantity and quality of the technical documentation each vendor provided with their system.

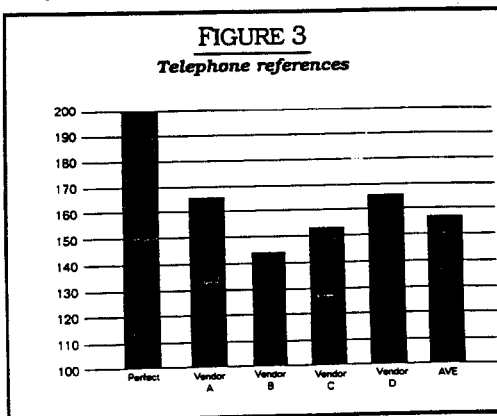
Also included in the RPQ was our consultant's contract questionnaire, which included 25 contract issues they have learned are crucial in eventually working out a favorable agreement. While the vendors were working on their proposals, MMS users began the next two tasks: telephones and manuals.

5. Phone references

While the vendors were responding to the RPQ, users at MMS were telephoning their counterparts at client practices, asking them questions from another checklist concerning response times, ongoing support and other questions. The users did not speak to management at the practices, but rather the

actual workers who used the system on a day-to-day basis, thus avoiding any "politically correct" answers from higher-ups who may be wary of angering vendors with negative comments. The "net" is shown in Figure 3, and shows how most vendors are rated far lower than the 98 percent positives that they typically respond with in an RFP. Indeed, the users began to get an earful about how no system was perfect, thus lowering their expectations from the hyperbole of the sales demos and educating them about how hard the conversion would be with any new system.

FIGURE 3
Telephone references



6. Manual review

While making reference calls, users at MMS also perused the systems' user manuals, which were borrowed from each of the semi-finalist vendors. Proposals are usually the product of vendors' marketing departments, often loaded with "futures" technical manuals; on the other hand, are usually written by service personnel and almost always are somewhat late in catching up with new releases, therefore, being far more conservative. In addition, the user manuals serve as an ideal product definition in a contract, having been written by the vendor and not subject to any interpretation or technical audit as are most RFP feature checklists.

Each vendor's documentation was reviewed for its timeliness, ease of use, illustrations, indexes and other features, again using a structured checklist. Each user department also looked up their Top 10 features in the manuals to ensure that the systems performed the functions they deemed critical, a process far more reliable than relying on proposals from vendor salespeople, which generally say "yes" to most questions in an RFP. The results of the documentation review are given in Figure 4 (page 64), which again shows far less than perfect scores, unlike most proposals.

7. Preliminary costs

While phone calls were being made and manuals reviewed, vendor responses to MMS's RPQ were being analyzed to compare costs. The RPQ had vendors respond to many "hidden" cost areas, such as travel, both for vendor installation personnel coming to New York, as well as MMS personnel traveling to vendor headquarters for classes. Ongoing annual maintenance fees for hardware and

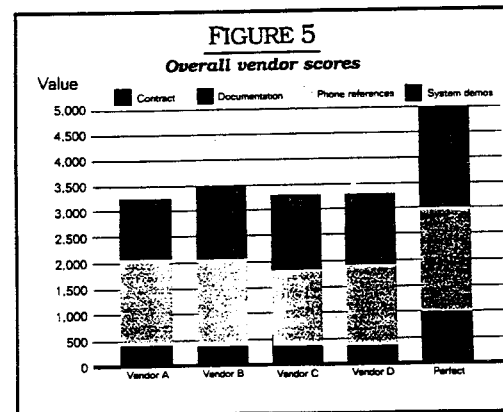
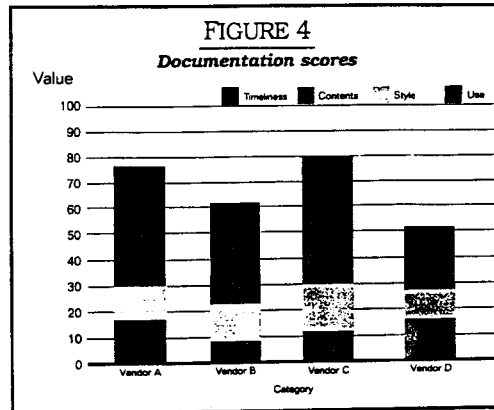
software were also factored in, so that total costs for five, seven and 10 years could be compared for the semi-finalists.

It is important to note that costs alone were not the sole factor in rating systems, but rather their "price performance," that is, the combination of their scores in demos, telephone references, user manuals,

etc., compared to costs. Buying the cheapest system is not necessarily a bargain, if it required extra FTEs or person-hours to work-around system problems and limitations.

8. Semi-finalist ranking

At this point the vendors were ranked, based on all of the cumulated results: system demos,



telephone references, user manual reviews and preliminary contract terms. Each department was asked to vote for their preferred vendors to proceed with in the search, with consideration being given to eliminating at least one vendor due to the time and expense involved in the next step: making site visits. The results generally followed the chart shown in Figure 5, which shows both the raw scores from each step, as well as how they were weighted to place more emphasis in such steps as telephone references than demos.

At this stage, preliminary price discussions were held with the vendors, soliciting discounts to help the firms keep in the running. Vendors were told that price was not the sole factor in MMS's decision, but that they could help their cause by offering discounts now to avoid being eliminated on other grounds. This iterative process of requesting discounts proved to be very valuable in the long run, as vendors generally offer their most favorable terms in a competitive situation, not when they are told they are the winner based solely on RFP scores.

9. Site visits

This step in the selection process involved MMS's users traveling to an actual user practice of the two finalist vendors to see their systems in live operation. Nearby sites were requested for several reasons: to lower MMS's costs for travel, to see the systems in operation in the demanding New York environment and to observe local service and support levels far away from vendor headquarters. Interestingly enough, one of the semi-finalist vendors with a supposed national presence could not arrange a local visit in New York, simplifying our decision as to which two vendors were the finalists.

10. Contract negotiations

The last step in the process involved simultaneous contract negotiations with the two finalist vendors. This minor detail deserves reinforcing, as many practices make the mistake of telling one vendor they are the winner based on their RFP score, thus losing the negotiating clout of competition. Both of the finalist vendors' contracts were examined in detail, and extensive lists of issues

drawn up, which our consultant then reviewed with vendor executives on site. Discounts were again requested, based on our consultant's knowledge of the going rates for systems and typical price reductions vendors offer. Thus, the consultants also served as a lightning rod for any ill will in the contract negotiating process, leaving MMS with the white hat for ongoing relations.

MMS management was then apprised of the results of the negotiations, and decided which vendor offered the best contract, based on price as well as contract terms and including such areas as response time guarantees, warranties, remedies and other factors. Thanks to the competition between the two finalist vendors, even further discounts were requested, this time by MMS directly to "close the deal." The result was an excellent price paid for a top-notch system, one that was supported by both the users and physician management.

Conclusion

There are many ways a medical group practice can evaluate systems better than the traditional RFP:

- Involving end users heavily in evaluating systems not only gains their detailed input on features but also increases their "buy in";
- Structured checklists can make steps such as telephone references and site visits as quantifiable as any RFP score;
- Perusing user manuals not only avoids marketing hyperbole but also serves as an excellent product definition for the contract; and
- Keeping two vendors in the running at the end, rather than having a single RFP winner, greatly increases negotiating clout.

We hope these techniques will assist other practices in their searches for new information systems. Just as systems have progressed enormously since they were first introduced in the 1960s, so too must the process by which we evaluate and select them. ■

Information Systems

What You Need To Know From Your Computer

Many administrators start their search for a new information system by looking at the weaknesses in their current computer system and finding a new one that addresses those weaknesses. This approach can result in some missed opportunities to find a system that really helps you improve the strategic management of your medical practice. Start your search by looking at the *information* you need to run your practice - remember that you are buying an *information* system. Any practice management system can help you do billing, insurance and collections; you should look for a system that helps you manage the practice.

As a "second generation" computer user, you should be using it to run your practice. Perhaps some information may already be available from your current system, or you might be able to generate some of the other recommended information by manually combining two or three existing reports. But doesn't this cut into your already scarce time? And isn't it really the job of your computer information system to help you save time?

We believe you need to use a number of different statistics to help you manage your practice. Managing the information will alert you to potential problems and possible solutions. And this makes your practice more profitable and successful in the long run because you are better able to quickly adapt to changes in the business environment.

OPERATIONS MANAGEMENT REPORTS

There are a number of reports you should review each month. The first set of reports allows you to look at your practice operations to see if there are any problems developing. For example, you may find a decrease in staffing expenses when a part-time billing clerk leaves. If A/R increases at the same time, you might guess it is because the clerk is gone, but if your collections activities (letters and calls) remain unchanged, the increase in A/R is probably because a payor has slowed and not because your staff isn't picking up the slack. As you can see, using multiple statistics allows you to quickly focus on the real cause of a problem.

Patient Flow

Statistics that show how quickly patients are moving through the physician encounter cycle can be used to improve efficiency. Among these statistics are:

- **Percentage of appointments kept.** Are your no-shows increasing or decreasing? Are the no-shows associated with a particular payor or physician? Could you reduce this with better pre-appointment reminders?
- **Appointment waiting time.** What is the lag between the time the patient calls to make an appointment and the actual appointment date? (Do not include scheduled follow-ups, periodic check-ups, or well-child visits.) Could you be losing new patients because they cannot be scheduled in a timely manner?

- **Office waiting time.** What is the lag between arrival at the office and the time the patient sees the doctor? Waiting is the most common complaint by patients, so you should be tracking it.

Satisfaction Survey

Statistics about patient satisfaction are important in improving customer relations. In addition, many managed care plans are beginning to evaluate your practice based on such measures. Your statistics can serve as an early warning system that allows you to correct problems before too many patients become dissatisfied. Your practice management system may not be able to provide these reports, but they are still important.

- **Number of patient satisfaction forms distributed and number of forms collected**
- **Satisfaction scores by payor trends.** Keep track of these trends over specific periods of time to measure your practice's satisfaction quotient.

Billing & Collections

Traditionally, this is one of the key focuses of monthly practice management information. It is still important to review, but you should look at other indicators to explain any changes.

- **Date-of-service to date-of-billing lag.** This can point to possible problems getting surgical procedure or hospital bills out. Review these statistics by physician to make sure that everyone is getting their paperwork in on time.
- **Date-of-billing to date-of-payment lag (Aging).** This is the same A/R aging that you have been using for some time. It is most appropriate to gauge this against historical trends in order to predict if an increase or decrease in lag will cause revenue fluctuations. It is also important to look at this by payor to see if any plans are slowing down payments.
- **Total A/R balance by payor (with historical trends).** This can also be reported as "days of revenue" (payor A/R ÷ payor annual revenue) to get a measure that is not sensitive to revenue growth.
- **Collections activities.** You should track the number of collection letters mailed and the number of patients called. You may find that an increase in A/R is correlated to a decrease in collections activities.

Financial Management

Lastly, you have to keep an eye on how operations impact practice financial results.

- **Accounts payable.** Express as a share of total annual expenses so you can see if you are sitting on two weeks worth of bills or three months.
- **Bank account balances.**

Continued on Page 4

Continued from Page 3

- **Income and expense statement.** Annualize your year-to-date figures. Compare to historical trends and industry averages on a per-physician basis. This will help you see the financial impact of various operational changes.

Basic Management

The operations management reports discussed above allow you to look inside your practice to improve your internal operations. This second set of reports allows you to look at factors outside your practice. We recommend that these be reviewed once each month to provide an early warning of potential problems. For example, if you see referrals from one office suddenly drop off, you may be able to get them back by finding out what has caused the referring physician to refer elsewhere. As discussed above, the use of multiple statistics allows you to quickly focus on the real cause of a problem.

Patient Sources

- **Demographics.** You should look at where your patients are coming from in terms of payor, referring physician, employer, home and work zip codes. For each category, you should report current month figures and watch for trends. If your referrals from a particular doctor are decreasing, find out if they are unhappy with your office and try to fix the problem.
- **Scheduled visits.** Look at your appointment log to see if visits already scheduled for the next month are above or below average. This could serve as an early warning that the next month will be particularly busy (or particularly slow).

Patient Management

HMOs and consumers are increasingly interested in how you care for patients and what your track record is. You should have an information system that allows you to collect and report this. You have good doctors - this lets you prove it.

- **Procedure frequency.** How many services did you provide last month? How many were office visits and how many were surgeries and/or procedures? You should be aware that a decrease in office visits this month will cause a decrease in surgeries next month. This report could let you predict the revenue shortfall and prepare for it. You should compare this to historical trends and report it by doctor and by payor.
- **RVUs Per Patient Seen.** Relative Value Units (RVUs) measure the complexity of each service. You should look at this statistic per patient seen to see if you are doing more or less per patient. Track this statistic by payor and by doctor. Remember that one patient seen three times is still counted as just one patient seen. HMOs will evaluate you on this, so you should know what they are going to say.
- **Visits Per Patient Seen.** In tandem with above measures, this can tell you if your doctors try to do as much as possible during one big patient visit or if they like the patient to come back for each separate service.

- **Referrals Per Patient Seen.** How often are you referring patients outside the practice? What services are you referring them for? To whom are you referring them? HMOs will know this and will measure you on this, so track it. Such HMO measures can mean thousands of dollars in additional reimbursement, so you have ample motive to track these figures.
- **Admissions and Length of Stay Per Patient.**
- **Prescriptions and AWP Per Patient.** What are your prescription patterns, and what is the average wholesale price (AWP) of drugs prescribed in a month?
- **Diagnosis Code Frequency.** What kinds of conditions are you treating? If you have enough diabetics, might it be worth bringing in a part-time dietitian to do nutritional training?

Contract Management

Lastly, we recommend a family of reports that tell you whether payor contracts are profitable or not.

- **Charges-to-Collections.** For each payor, what is the ratio of charges to collections? You should also look at denial rates and write-offs by payor. This report should compare actual payments to the payor fee schedule. Payors aren't always good about telling you they decreased their fees, but this report will show it.
- **Cost of Providing Services.** Any system should allow you to estimate the cost of each service to allow you to estimate the profitability of a fee schedule or capitation contract.
- **Capitation Profitability.** Compare the revenue per RVU for each different payor. You may find that you are paid more under capitation or you may find it is a loss. In either case, you can make an informed decision regarding the profitability of a contract now.

For most of the measures above, we recommend that your reports show trends over time reported in a rolling five-year historical average, a rolling 12-month average, current year-to-date and current month. If your practice is experiencing rapid growth, you should report the figures on a per physician basis.

If you are reviewing these reports on a regular basis, you should be able to fix problems before they get too big. And, while many indicators will not change significantly from month to month, you should always keep an eye on things. Like the engine temperature gauge in your car, many measures don't change often, but are important to heed when they do change. A good information system gives you more of the dials and indicators you need to run a successful practice.

Information systems today need to do more than simply handle billing and collecting. An informed manager must rely on today's statistics to make informed decisions about the management of your medical business. While the reports you should monitor will vary depending on your practice's managed care penetration, these statistics are vital in today's environment. If your computer system can't provide them now, consider their importance as you look to upgrade your technology. You cannot use yesterday's technology to monitor today's medical practice.

Keys for integration

Choose a system that does it right

by Tom Skelton

Abstract

Key words: Computers - integration, - selection

No longer is it an issue of whether to integrate clinical, administrative and managed care information in an ambulatory care setting, but rather how quickly and efficiently to accomplish this objective. There is industry-wide consensus that data should be captured once so that it flows through the system with no additional user activity. With an abundance of ambulatory settings, varying widely in size and scope, promising high quality with improved efficiencies and cost savings, it becomes the responsibility of the practice administrator to select the "dream machine." The right choice will enable practices to deliver on their promises.

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No longer is it an issue of whether to integrate clinical, administrative and managed care information in ambulatory settings, but rather how quickly and efficiently to accomplish this objective. There is industry-wide consensus that data should be captured once so that it flows through the system with no additional user activity.

The challenge becomes which system to choose to create seamless integration. Until recently, the selection was less complicated since few integrated products met market demand. The scene has changed, and currently, there are several systems that allege to offer a total solution.

"Dream machine" vs. "the jalopy"

When evaluating products, this analogy may be helpful. Think of a sleek automobile with all the parts synchronized for peak performance. The engine turns over without a hitch, and all systems are "go"

every day of the year. Surely, the dream machine requires service and TLC, but every quality vehicle requires maintenance to keep in top form.

On the other hand, picture the jalopy, a piecemeal conglomeration of paint finishes and disparate parts. Nothing matches on the outside, and under the hood, things get worse. The parts simply don't mesh — it's out of tune no matter how much servicing is provided.

When in the market for an integrated solution, remember this illustration. All the components of a system should work in concert to accomplish the goal of truly integrating data, not simply interfacing pieces of information. Like the sleek automobile, the dream machine for data integration must deliver high-caliber performance every day. In today's competitive health care climate, a practice cannot afford false starts or breakdowns.

What's hot, what's not:

The selection process

With many models from which to choose, the astute practice manager

must focus on key capabilities.

Some of the "must have" features as described will achieve true integration; anything less results in data interface, not integration.

Single input of data — Staff needs to enter data once and consider the job done. Since patient care often spans many days and encounters, look for a system that requires just one patient registration over the course of treatment. Be aware that single registration also can be accomplished with an interface, but this solution is less desirable. An interface between two systems requires maintaining two sets of master files and maintaining translation tables in between. This situation can be tedious, can increase staff costs and may be error-prone.

Accessibility of data — Physicians and staff should be able to extract information from a single query across all modules of the system — including managed care, clinical and financial — with proper security. Providing this access, where appropriate, is a key function of an integrated system.

Consistency of data — An integrated system should provide consistent data. For example, you can't assign a patient three different identification numbers over three different solutions and expect to extract consistent data. Remember the dream machine — everything has to mesh for consistent output and optimal performance.

Data availability — During the caregiving process, from point of care through follow-up, data should be available to authorized personnel where and when it is needed. Look for a system that allows various authorized levels of the caregiving team to access data in multiple treatment settings.

Data flow — Data captured at the point of care should flow naturally into the administrative and managed care modules of the system. This flow of information obviates redundancy and also may provide an important step in the development of an electronic medical record (EMR). By carefully controlling the flow of data, you improve the quality and consistency of the information, both essential ingredients for an EMR.

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Data management — the bottom line is a system that allows simultaneous access to clinical, financial and managed care data will enable practice managers to extract the information needed for accurate cost and quality-of-care analysis that leads to a better business outlook. This can be best achieved by selecting a system that provides the ability to analyze and "mine" the data.

The whole may not be the sum of the parts

The decision to upgrade an existing system or buy a complete, integrated product is critical and is sometimes driven by resource dollars. With any purchase of this magnitude, cost is a primary concern. Look to long-term, valuable solutions that, in the end, will be money well spent.

Consider the implications of a short-sighted decision. If the vendor being considered does not have a single integrated solution, you may be forced to buy one system for clinical and one for administrative functions. Once down that path, you may find yourself getting in deeper, with

"All the components of a system

should work in concert to accomplish the goal of truly integrating data, not simply interfacing pieces of information."

disparate products that are incompatible and incapable of marrying the data. Even if the products you choose are both excellent, the task of coordinating their functions and blending their data will become more difficult as each vendor enhances its product in the future. With multiple vendors involved, a failed interface prompts finger-pointing in the midst of crisis.

Standards have become essential due to the many disparate systems in the current market, but standards are merely an attempt to deal with the ugly problem of the mess under the hood. HL-7 and similar standards do not necessarily accommodate your data needs, may be slow to address new releases of data and suffer from differing interpretations. As a result, you may be dealing with two vendors, stuck in the middle of trying to figure out how to pass data back and forth. Sometimes, when enhancing existing systems, you may have to seek a vendor that is capable of integrating with your existing capabilities.

When it comes to calculating the cost of a system, consider both the hard costs of implementing an interface and the soft costs that may surface when one vendor has never tested its software with the other vendor you selected. You become the quality assurance team, burdened with consumption of staff time and a drain on resources.

Selecting a vendor:

What to look for

Following is a checklist for practice managers that may assist in the development of a vendor request for proposal as well as the vendor selection process:

- experience in implementing integrated solutions — Is the vendor new to the market and planning to use your practice as a guinea pig? The vision of an integrated product suite is one shared by all vendors: the real issue is does the reality match the vision?
- current technology — Does the vendor have the most up-to-date solutions? Do your homework and compare product offerings;
- training programs — Everyone on your staff, including the doctors, needs this educational component;
- implementation team — Vendor should identify the team players and articulate qualifications and credentials;
- ongoing support — Ascertain the scope and timelines of services available;
- financial stability — Assess the wherewithal of the corporate entity;
- consistent pattern of new software releases — Check the vendor's track record for innovation;
- reliability — Seek assurances that the vendor will deliver on its promises. Caveat emptor applies to all practice managers;
- industry leadership — Look for a vendor with wide geographic/national recognition;
- in-house vs. subcontracted services — Services should be provided directly from the vendor to the customer to ensure reliability;
- references — Check references carefully to assess vendor performance with practices of similar size, scope and specialty; and
- comparison shop — Review industry publications and attend trade shows to ensure market knowledge.

Look ahead to an era where seamless integration is a requirement for successful practice management. In the health care planet of the new millennium, the ability to capture and integrate data may well hold the key to survival. Choose your system carefully, selecting the best-of-breed solution: a dream machine for integration that will position your practice ahead of the pack. ☐

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Electronic Medical Records: A Practical Guide To the Journey

Physicians striving to improve both quality of care and practice efficiency can look to a new technology—the electronic medical record (EMR). EMR is a set of computer-based applications that targets improvement in three critical areas of clinical practice:

- 1.) Workflow;
- 2.) Documentation; and
- 3.) Decision making.

Dozens of software companies have entered the EMR market, providing an array of products. Some focus on EMR as a separate, niche market. Some are extending their work in physician practice management systems. Others are adapting their solutions for hospital clinical data repositories for use in ambulatory care settings.

Today, only 5 percent of physicians use EMR. Within the next five years, however, that number will grow to more than 50 percent.

Be an Early Adopter

Should you invest now? Should you wait until the market shakes out? Read on—your EMR journey may start here.

Just as with other technologies, it is the early adopters who will gain the competitive advantage in the next few years, as the EMR field narrows down to a dozen or so "best solutions." Understanding the central issues of EMR software, technology, services and company management will help you as you start out on the exciting and rewarding journey to EMR.

EMR should present you with data about a patient in a way that is easier and that gives you more information than if you referred only to the chart. The following EMR features are among the most important to consider for retrieving information about a patient:

Patient health summary display:

Does the EMR present information in a summary form that gives you a good snapshot of the most relevant patient data?

Comprehensive data displays: Does the EMR maintain and display such historical information as:

- Past medical, family and social history;
- Allergies and immunizations;
- Tests and procedures pending results;
- Clinical results; and
- Medication history?

MICHAEL LAKE



Images: Does the EMR support maintenance and display of EKGs, patient photographs, radiographic images, drawings and other nontextual information?

Links among chart elements: Does the EMR link the many elements of the patient chart to facilitate navigation and to establish clinically relevant associations?

Health maintenance reminders and alerts: Does the EMR allow you to establish clinical rules for reminding you when to see a patient (e.g., a woman patient over 40 years old with her last mammogram performed more

than one year ago)? Will it alert you to seriously abnormal values?

Embedded report writer: Does the EMR provide a tool that is easy to use and allows you to search its database to produce practice-specific reports?

Documenting Care

EMR also should allow you to document patient care at least as comfortably as if you were writing in the patient's chart. Consider the following features:

Notes entry: Does the EMR provide tools such as templates, macros, user-defined forms and others that facilitate entry of a clinical note?

Managing problems and chief complaints: Does the EMR make it easy to enter multiple problems and chief complaints? Does it provide space for entering status information about them?

Dictation: Does the EMR support dictation for clinical notes and reports, including the embedding of recorded voice snippets into a note? Does it support the scanning of previously dictated and typed documents?

Data structure and encoding: What elements of the patient's record does the program structure and encode so that you can use the database to analyze clinical practices and business functions?

Entering medications: How do you enter new medication orders and refills into the system? Can the EMR check on drug interactions?

Entering orders: Does the EMR support the entry of orders for tests and treatments? Can it link these explicitly to medical problems?

Multiple formularies: Does the EMR support multiple formularies and multiple lists of laboratory tests by payer?

Entering charges: Does the EMR support the entry of charges and provide tools to ensure proper visit coding

and accurate transfer to a billing system?

Handling referrals: Does the EMR maintain a list of referring physicians by payer, provide guidelines for referrals, and facilitate communication of relevant clinical information?

Enhancing Workflow

EMR should enhance the workflow in your clinical practice by supporting the communication of patient-related issues within the office. The following features are among the most important:

Scheduling: Does the EMR provide patient scheduling? Does it link the scheduling and messaging functions?

Messaging: How does the EMR enhance intra-office communications, such as patient rooming, assignments, requests to phone-in prescription refills, and other issues?

To-do lists: Does the EMR provide a to-do list, automatically flagging charts for signature and test results to review? Can this list incorporate reminders from the physician?

Patient letters: Does the EMR provide a way to generate patient letters automatically for a variety of purposes?

Concurrency model: Does the EMR make the chart available to all office staff concurrently, so that a nurse may enter vital signs while a physician enters notes?

Interfacing to external systems: Can the EMR send and receive information from practice management systems, laboratory systems, transcription systems and hospital information systems?

Usability

Finally, will you use the EMR product? Consider these key issues of usability:

Intuitiveness: Is the EMR's user interaction intuitive? Does it mirror the way you usually work?

Speed: Can the EMR handle the routine, repetitive tasks quickly?

Customizability: What aspects of the EMR can you tailor to your own preferences?

Authoring environment: Does the EMR have an authoring environment to develop templates, patient questionnaires and other tools?

Clinical content: Does the EMR provide the content for the formularies, interaction rules, common note templates and forms?

Accessibility: Is the EMR easily accessible in the examination room? Can you access the EMR from outside the office?

A Purchase or a Partnership?

EMR is an emerging technology. Companies improve their software each year; all the key suppliers are adding features at a rapid pace. Therefore, the product with the richest features this year may not be the most functional next year. But there are other issues to consider besides the software when making your EMR decision.

One is buying what strategic marketers term a "whole product"—a product that provides a 100 percent solution. For EMR, this includes training, implementation, integration, re-engineering and support services. These ensure the successful integration of the software into your office environment, so that you can achieve the expected benefits. Most EMR projects succeed or fail because of the support services, not because of a particular feature's unavailability or malfunctioning.

According to venture capitalists and investment bankers, the three most important criteria in selecting a company for investment are "Management, management and management." Physicians should apply these same criteria when selecting an EMR system.

Only an EMR supplier with strong management will be able to raise the capital necessary to continue to compete in this complex market. Strong management can handle growth; it can commit to a focused vision. It also can handle the interdepartmental boundary issues that can cripple a company. Look for a management team that has been together a while and that has established an organizational culture built on trust, accountability and performance.

Frame your EMR decision in the long term. It is the partnership, as much as the software, that delivers the benefits.

Technology Wars

None of us has a crystal ball. We're never sure where the next important technology will spring up. Generally, the architecture of today's EMRs assumes a client using personal computers running Microsoft Windows 95 or NT and a system server running NT or UNIX supporting Microsoft SQL, Oracle, Sybase or Informix. Many EMRs also run on a Citrix server and can use low-cost network computers in

the examination room. Some EMRs work effectively on portable notepad devices and wireless networks. EMRs also are taking advantage of Internet technology and can run under browsers like Netscape or Microsoft Explorer (see *Today's Internist*, September/October 1997, page 35).

If EMR is a journey, take the solid technology path. EMR vendors that develop alternative, proprietary technologies pay a high price in the long term. Stay close to the most standard technologies, and you will be on solid ground.

Bon Voyage

The journey toward EMR holds enormous promise for our health care delivery system. In the long term, EMR will grow into a billion-dollar-per-year industry. We will invest this much because the returns of better quality care at a lower cost are worth 10 times that.

Early returns from EMR in your practice will involve cost savings from reduced chart pulls, lower transcription costs, lower premiums for insurance, and a generally enhanced workflow. Many offices are improving revenues

EMR should present you with data about a patient in a way that is easier and that gives you more information than if you referred only to the chart.

through more accurate coding for encounter claims. Clinical quality will improve through fewer medication errors, better accessibility to the chart, and better clinical documentation.

Consider these four concluding admonitions: There is no perfect product. Invest now. Don't wait. Take the journey. ☐

Michael Lake, an authority on EMR business development, has developed, implemented and marketed clinical information systems for more than 25 years. As the chief operating officer of Ball Atlantic Healthcare Systems (now OcuS), he was at the forefront in developing the computerized patient record. As executive vice president at Oceano—working with its partner, Kaiser Permanente—he helped launch one of the first pilot sites for structured clinical notes. Recently, as president of Circle Square Inc., San Francisco, he has worked on strategy and business development with EMR software companies and their capital sources.

Computerized Patient Record Systems:

A Survey of 28 Vendors

A lot has changed since our 1995 survey. If you're thinking of computerizing your records, here's data you'll need to know.

Steven M. Ornstein, MD, Ruth G. Jenkins, MS, and Robert L. Edsall

Two years is a lifetime in the world of computers and software, and it was nearly two years ago that *Family Practice Management* published "A Vendor Survey of Computerized Patient Record Systems" (February 1996) — and that was based on a 1995 survey. It would be high time for a second look even if computerized patient record (CPR) systems were an established, mature technology. But since the industry is growing and evolving at the same time that family physician interest in CPR systems is taking hold, we felt that a return to the subject was imperative.

Survey design

We used the same survey as in 1995. It was 31 pages long, containing six major sections, each with several subsections, and a total of 324 questions. (See "What the survey covered," page 48, for a more detailed description of the instrument.) Most questions required simple check-off responses; some were open-ended. The survey form provided ample room for respondents to elaborate on their answers.

We compiled descriptive information about the vendors and their products from their responses to sections IV (CPR system market, functional requirements

and costs) and V (Company information) of the survey. We also compiled discrete responses to most of the questions from sections I (General design attributes), II (Health care provider functionality) and III (Patient functionality). We called the vendor references (practices actually using the systems) to corroborate responses from vendors whose products seemed dramatically better than others.

We compared the vendors' responses in the sections on general design, provider functionality and patient functionality, and we assigned section scores using a one- to five-star scale. We also calculated an overall score by averaging the scores in these three sections (see "Composite ratings of 28 CPR systems," page 51).

Respondent characteristics

Information about the 28 responding vendors and their CPR products is presented in "Characteristics of vendors and CPR systems," page 52. Of these vendors, seven had also responded to the 1995 survey. Eleven of the 1995 survey respondents didn't respond to this survey.

Market maturity. Like the 1995 survey, this one reveals the relative youth of the primary care CPR market. Thirteen of the 28 vendors released their first CPR products within the last three years, and

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SPEEDBAR

◀ The authors used an extensive survey to compare available computerized medical records (CPR) systems.

► Results provided a snapshot of 28 CPR systems from a young and quickly developing industry.

► The survey covered characteristics of the vendors and the intended markets for their systems as well as the design of the systems themselves.

► Features are compared under the headings general design, health care provider functionality and patient functionality.

only seven vendors had CPR systems before the beginning of this decade. Most vendors continue to update their products. Nineteen respondents described 1997 releases, and five described 1996 releases.

Operating systems. Most vendors offer versions of their products for several operating systems. Twenty-six use one or more of the Microsoft Windows operating systems, eight continue to have DOS versions and seven have Unix versions. Only one vendor has a Macintosh version.

Intended markets. Most of the respondents' products are intended for practices of any size. Computerized Patient Records, Dossier of Clinical Information (DCI) and SOAPware aren't intended for multisite practices. Clinical Management System, EDS/InterPractice System, Encounter and Pathways Smart Medical Record are marketed primarily for larger and multisite practices. No intended market was specified for Smart-Med.

Live sites. Five of the vendors have 10 or fewer sites using their software, nine vendors have 11 to 100 sites and eleven vendors have more than 100 sites.

Only seven vendors had CPR systems before the beginning of the decade.

The numbers of sites using Clinical Management System, NextGen and The Medical Manager weren't reported.

Cost. Seventeen vendors didn't report system costs, so the cost information provided in the table is of limited use in comparing systems. Among those who did, the estimated costs ranged as follows:

- For an office with one health care provider and five workstations: \$8,500 to \$70,000;
- For an office with eight health care providers and 40 workstations: \$55,000 to \$280,000;
- For a practice with three sites, 20 health care providers, 100 workstations and appropriate linkages among the sites: \$150,000 to \$700,000.

A note about EDS/InterPractice. Between administration of the survey and publication of this article, EDS ceased

active marketing of InterPractice System. According to an EDS spokesman, the company is still supporting the product and is looking for a partner to work with in re-entering the marketplace. In the meantime, the spokesman says, the company will sell the system to interested multisite practices.

General design

For an overview of the designs of systems covered in the survey, see "General design features of 28 CPR systems," page 56.

Data elements. All the products are reasonably complete in the data elements they track, although there is great variability in the proportion of data elements that are coded (40 percent to 98 percent). In addition, a number of systems don't support images.

Structure and organization of data. Most of the systems are problem oriented, and some support a family orientation as well. Most include or allow the inclusion of several coding systems, but only five have a built-in standard data dictionary. All but three of the systems have graphical user interfaces, which allow a variety of data displays, although some maintain a character-based interface in addition. Three vendors offer only character-based interfaces. All vendors reported that their products have rapid screen updates, and all but three can highlight abnormal data. All but two products allow customization of data views. Twenty-four products have a summary data screen. Twenty-four allow simultaneous access to several parts of an individual record, although only 10 can display more than one record at once. Most products allow users to search for specific patient data by date and problem; only half support searching by text strings. All the products support data entry by keyboard, 26 by mouse, 19 by light pen, 18 by touch screen and 17 by voice.

Accessibility. Most of the CPR systems give authorized users easy access to data. All but one support updating multiple components of a record with a single data entry, simultaneous access by multiple users and modem access from outside the practice. Daily downtime (scheduled and unscheduled) was an hour or less for 25 systems, one to two hours for two systems and unreported by one vendor. ▶

What the survey covered

The areas addressed in each of the six major sections of the survey are listed below, with the total number of questions in each area given in parentheses.

I. General design attributes

- Data elements: patient identifiers, patient activity status, historical database, social history, family history, risk indicators, problem lists, visit notes, vital signs, laboratory data, images, drawings, medication lists, immunization records, hospitalization information, consultation reports, written correspondence, reports of ancillary studies and customizable elements (114 questions);
- Structure and organization: orientation (problem and family orientation), coding and data dictionaries (five questions);
- Ease of use: user interfaces, displays, views and data input devices (13 questions);
- Accessibility: multiple providers, modem and telephone access, and downtime for maintenance (five questions);
- Interfaces with financial and appointment software and with outside sources of clinical data (eight questions);
- Electronic mail: internal and external (two questions);
- Training: help screens, instructional materials, tutorials and training time (seven questions);
- Confidentiality: passwords, password maintenance, limited access by user and data elements, access audit trails, and operator notification and screen time-outs (10 questions);
- Accuracy and integrity: error checking, access limitations, audit trails of updates, data storage redundancy and backup mechanisms (seven questions).

II. Health care provider functionality

- Records management: results reporting, forms completion and record transmission (18 questions);
- Individual case management: chart maintenance, reminders (prevention, chronic disease), health and functional status measures, clinical

variable control charting, decision support (access to expert systems, practice guidelines, medical literature), order entry (diagnostic tests, medications, other therapies) and documentation support tools (note entry, drawing tools, electronic signature) (76 questions);

- Administrative reports, continuous quality improvement and community-oriented primary care: patient profiles, patient satisfaction, provider productivity and utilization, practice audits, query functions and report generation (14 questions).

III. Patient functionality

- Reminders: appointments based on protocols (prevention, chronic disease, etc.) (five questions);
- Access to information in the patient record: office and home access (four questions);
- Educational resources: printable materials and catalogs of other sources (brochures, videotapes, multimedia software, classes, support groups) (five questions).

IV. CPR system market, functional requirements and costs

- Intended market: small, medium, large or multisite practices (five questions);
- Functional requirements: operating systems, file servers and workstations (seven questions);
- Total system costs: costs for various practice configurations (six questions).

V. Company information

- Formation (two questions),
- Employees (four questions),
- CPR system installations and users (seven questions).

VI. References

- Names of references from small, medium and large practices.

Interfaces and E-mail. Most of the products incorporate interfaces with practice management software, either from the same vendor or from another. Twenty-five products have interfaces with financial software and 23 with appointment scheduling software. Twen-

ty-five products have E-mail systems for use within the practice; 20 systems support external E-mail.

Training. Twenty systems provide context-sensitive help from all system screens. Twenty-four have instructional materials, and 24 have manuals, but only

eight offer multimedia training tutorials. Ten vendors reported that physician training requires less than four hours, nine reported four to eight hours, six reported eight to 16 hours and two reported more than 16 hours.

Confidentiality. All the systems have password protection, although only half require password changes at regular inter-

vals and only two can generate passwords automatically. Twenty-seven of the systems allow users to limit access to certain functions, 25 to specific records, 22 to subsections of records and 21 to discrete data elements. Twenty-four of the systems provide audit trails of access to the system, but only nine warn the "sysop" or system manager, immediately when someone

Composite ratings of 28 CPR systems

Scores for general design, functionality for health care providers and functionality for patients were determined as follows:

- ***** Has more than 90 percent of the important functionality
- **** Has 76 percent to 90 percent of the important functionality
- *** Has 51 percent to 75 percent of the important functionality
- ** Has 25 percent to 50 percent of the important functionality
- * Has less than 25 percent of the important functionality

The overall score is based on an unweighted average of the three individual scores, rounded to the nearest integer.

CPR system	General design	Functionality for health care providers	Functionality for patients	Overall score
AutoChart	***	****	***	***
Azron EMR	***	****	*	**
Berdy Smart Clinic	***	**	*	**
ChartWare	***	****	*	**
Clinical Management System	***	***	**	***
Clinical Master	****	****	****	****
Compendia	***	****	*	***
Computerized Patient Records	***	***	**	***
The Doctor's C.E.O.	**	**	**	**
Dossier of Clinical Information	***	**	**	**
Dr. Chart	****	****	**	***
Dr. Notes	***	**	*	**
EDS/InterPractice	***	***	**	***
Encounter	****	****	***	****
Health Point	***	**	*	**
Healun Probe	****	****	***	****
Infinity Medical Record	***	***	**	***
The Medical Manager	***	***	***	***
NextGen	**	***	*	**
PALMED	****	****	***	****
Pathways	***	**	*	**
Pearl	****	****	****	****
Practice Partner	****	***	****	****
QD Clinical	****	***	**	***
Smart-Med	****	****	****	****
SOAPware	****	****	****	****
Stat*Pack	***	***	**	***
TMR-The Medical Record	***	***	***	***

attempts to gain access without authorization. Twenty-one products use screen time-outs to limit unintended access.

Accuracy and integrity. Most of the systems maintain data accuracy and integrity in several ways. Twenty-two have error-checking algorithms for all data that aren't free text, and 20 allow the system to be set up to limit data entry by specific users. Twenty-four systems track which users enter data or make changes, and 18 maintain copies of original data that are changed. Database integrity is maintained by redundant real-time storage in 24 systems and by backup mechanisms in 27 systems.

Overall. Clinical Master, Dr. Chart, Encounter, Health Probe, PAL/MED, Pearl, Practice Partner, QD Clinical, Smart-Med and SOAPware have the most complete general design features.

Health care provider functionality

Features of particular interest to physicians as health care providers — records management, case management and reporting features — are displayed in "Health care provider features of 28 CPR systems," page 58.

Records management. Eighteen products have complete results-reporting features (allowing the physician or another provider to review and electronically sign reports, including notes for visits and telephone calls, laboratory data, ancillary studies, consultations and hospital discharge summaries), seven products have some of these features and three products have none. Fourteen can complete forms for insurance companies, report physical examination results, work or school excuses, referral letters, patient summaries and test report letters. Twelve products have some of these functions, and two have none. Twenty-six products allow electronic transmission of records to other sites, commonly by fax.

Individual case management. Thirteen systems have comprehensive chart maintenance features that prompt users to update problem, allergy and medication lists. Twelve systems have one or two of these features, and three have none. Twenty-three systems maintain the record's problem orientation when problem lists are modified.

Twenty-five products provide at least

STEADBAR

► While at least two prominent vendors did not participate in the survey, the results can be a starting place for potential purchasers.

► From the survey, PAL/MED, Practice Partner, Health Probe and SOAPware stand out for both score and longevity.

► Five systems with somewhat lower scores but numerous installations may be worth considering.

► Similarly, four products with high scores but less extensive track records bear watching.

some help in tracking and issuing reminders of need for preventive services. Twelve have complete features, including default algorithms, the ability to modify algorithms by practice and patient, tracking of patient refusals and issuing of reminders for health care providers. Twenty products have some disease-specific reminder features, but only nine have complete features.

Seventeen products allow tracking of health-related quality-of-life or functional-status measures, although no vendor indicated the use of a specific instrument. Twenty-three products allow graphical displays of data over time, and 17 have pediatric growth charts. However, only seven products can display statistical process control charts, which are important for identifying and following trends in clinical data in individual patients and for quality improvement projects.

Remember that we're presenting what vendors say about their own products.

Only three vendors reported interfaces with expert system software, but 16 products provide access to practice guidelines and other literature, either through an integrated web browser or another interface.

Twenty-six systems have some order-entry capabilities. Fifteen can communicate with the unit responsible for the order, provide audit trails on orders and track the completion of orders. Thirteen have relatively complete test ordering functions, including at least four of the following: test inventories, costs, insurance coverage, local availability, performance characteristics and order sets. Eleven systems have relatively complete order-entry functions for therapeutic services, including at least four of the following: inventories, cost, insurance coverage, local availability and order sets. Sixteen products have relatively complete medication order-entry functions, incorporating at least six of the following: formularies, costs, dosage calculations, allergy checking, adverse-reaction checking, drug-drug interaction checking, drug-disease interac-

tion checking, and information. Eleven systems maintain both consultant lists and insurance coverage information; 10 offer one of these functions, and seven have neither.

Twenty-three products have complete note-writing tools, including templates, macros or pick lists, and the ability to insert pre-existing data into a note; all but one incorporate electronic signatures. However, only four systems have complete drawing tools, including image templates and the ability to create genograms.

Administrative and quality reports.

Twenty-three systems can compile patient profiles based on demographic data, disease states and other variables. Twelve track measures of patient satisfaction, although no vendors mentioned specific instruments. Twenty products report on provider productivity (i.e., patient volume), and 21 report provider utilization of diagnostic tests, medications and consultations. Eighteen products routinely audit adherence to protocols for services such as preventive care and chronic disease monitoring. Twenty products can generate, print or store ad hoc reports from queries on any data fields and export data from reports to other data management software.

Overall. AutoChart, Clinical Master, Compendia, Dr. Chart, Encounter, Health Probe, PAL/MED, Pearl, Smart-Med and SOAPware have the most complete functionality for health care providers.

Patient functionality

The functions of the CPR systems that are of particular relevance to patients are presented in "Patient features of 28 CPR systems," page 59.

Appointment reminders. Twenty products can provide patient reminders for scheduled appointments. Eighteen can make appointments automatically based on a plan established at a prior visit, 15 can do so based on general practice protocols and 17 can do so based on needed preventive services. Twelve products have all of these appointment reminder functions.

Access to information. Eleven products allow patients to access their CPRs in the practice. Six products allow access from both the practice and patients' homes.

Educational resources. Seventeen systems include the ability to print educational materials on tests, procedures, diseases and medications. Twelve have catalogs of other patient education materials, and six offer inventories of patient support groups. Eight systems have integrated web browsers for access to Internet-based resources.

Overall. Clinical Master, Pearl, Practice Partner, Smart-Med and SOAPware have the most complete patient functionality.

Ranking the systems

For general design, one product received a two-star rating, 17 products a three-star rating and 10 products a four-star rating (see "Composite ratings of 28 CPR systems," page 51). No product received a five-star rating. For health care provider functionality, six products received a two-star rating, 12 a three-star rating, six a four-star rating and four a five-star rating. Scores in the patient functionality category were lower. Eight products received a one-star rating, nine a two-star rating, six a three-star rating, four a four-star rating and one a five-star rating. The overall scores were two stars for nine products, three stars for 11 products and four stars for eight products.

We hope that this updated survey, like our first article, will give you practical guidance in selecting a CPR system. Indeed, since this article presents information about twice as many systems, it should be considerably more useful.

But be careful not to put more weight on our findings than they can bear, given the inherent limitations of the survey format. Remember that we're presenting what vendors say about their own products. With the resources available for the project, we couldn't test the systems surveyed. Also, 10 of the respondents to our earlier survey didn't participate this time. Although some of these vendors may no longer be in the CPR market, several, including MedicaLogic (800-322-5538), are still prominent. Another prominent vendor, Epic Systems (608-271-9000), didn't participate in either survey.

For the most part, this survey should serve as a starting point for potential purchasers — one way to identify a few CPR systems to explore in greater depth. For an approach to choosing a CPR system,

see our 1996 article and "Evaluating Software for Computer-Based Patient Records," *Family Practice Management*, September 1995, page 49.

Based on these guidelines and considering only the findings of this survey, we believe four CPR systems stand out from the others and warrant your closest scrutiny: PAL/MED, Practice Partner, Health Probe and SOAPware. Each of these products has been on the market at least three years, has more than 100 installations and earned an overall score of four stars. PAL/MED and Practice Partner were recommended in our earlier survey; Health Probe and SOAPware were mentioned as products worth considering.

Five other products may also be particularly worth considering, based on this survey's results: AutoChart, Computerized Patient Records, Compendia, Dr. Chart and QD Clinical. These products have overall scores of three stars and more than 100 installations each.

Finally, we believe four other products bear watching: Clinical Master, Encounter, Pearl and Smart-Med. They received overall scores of four stars but are relatively new on the market or have relatively few installations.

The marketplace for CPR systems is still maturing, but make no mistake: It's long past its infancy and has developed a great deal in just the two years since our first survey. Among the systems now available are several that, properly implemented, could equip you better to manage your patients, learn from the outcomes of your care, adapt to developing clinical guidelines, improve your delivery of preventive care and control costs. Computers have revolutionized data storage by making data more portable, more easily accessible and easier to analyze. Frankly, your paper charts are obsolete, and it's high time to think about what will replace them. ▶

Author disclosure: Dr. Ornstein says that he has received grants or research support for projects unrelated to this article from Physician Micro Systems, one of the vendors of CPR systems surveyed for this article.

Four systems stand out from the others and warrant your closest scrutiny.

General design features of 28 CPR systems

[illegible]

	Mobile equipment usage	Network access Monitoring Accession Path	Financial	Interactions	Electronic mail	Training	Training time (hr)			
				Appointment scheduling Laboratory data Referring data Activating studies Consultations Discharge summaries ICU Transfer ICU Transfer	Online practice	Control scheduling logs Training materials Practice and online Multimedia libraries Physician	Nurse	Administrative		
AutoChart	✓	Q-1	✓	✓	✓	✓	N/A	N/A	N/A	
Azren EHR	✓	Q-1	✓	✓	✓	✓	Q-4	Q-4	15-24	
Beyers Smart Clinic	✓	Q-1	✓	✓	✓	✓	4-8	4-8	4-8	
ChartVare	✓	Q-1	✓	✓	✓	✓	4-8	4-8	4-8	
Clinical Management System	✓	1-2	✓	✓	✓	✓	4-8	4-8	2-4	
Clinical Vision	✓	Q-1	✓	✓	✓	✓	Q-4	4-8	4-8	
Compendia	✓	Q-1	✓	✓	✓	✓	8-16	4-8	4-8	
Compunet Patient Records	✓	Q-1	✓	✓	✓	✓	4-8	4-8	4-8	
The Doctor's C.E.O	✓	N/A	✓	✓	✓	✓	8-16	8-10	8-16	
Doctor of Clinical Information	✓	1-2	✓	✓	✓	✓	4-8	4-8	4-8	
Dx Chart	✓	Q-1	✓	✓	✓	✓	4-8	4-8	4-8	
Dx Notes	✓	Q-1	✓	✓	✓	✓	4-8	8-16	16-24	
EDS-InterPractice	✓	Q-1	✓	✓	✓	✓	4-8	4-8	4-8	
Encounter	✓	Q-1	✓	✓	✓	✓	8-16	4-8	4-8	
Health Pump	✓	Q-1	✓	✓	✓	✓	4-8	4-8	4-8	
Health Probe	✓	Q-1	✓	✓	✓	✓	4-8	4-8	4-8	
Inform Medical Record	✓	Q-1	✓	✓	✓	✓	8-16	4-8	4-8	
The Medical Manager	✓	Q-1	✓	✓	✓	✓	16-24	16-24	16-24	
NetGen	✓	Q-1	✓	✓	✓	✓	2-4	2-4	2-4	
PALMED	✓	Q-1	✓	✓	✓	✓	4-8	8-10	8-10	
Pathways	✓	Q-1	✓	✓	✓	✓	4-8	4-8	N/A	
Perl	✓	Q-1	✓	✓	✓	✓	8-16	16-24	2-4	
Practice Partner	✓	Q-1	✓	✓	✓	✓	4-8	4-8	4-8	
QD Clinical	✓	Q-1	✓	✓	✓	✓	8-10	8-10	4-8	
SmartView	✓	Q-1	✓	✓	✓	✓	4-8	4-8	4-8	
SOAPower	✓	Q-1	✓	✓	✓	✓	Q-4	Q-4	Q-4	
StarPack	✓	Q-1	✓	✓	✓	✓	4-8	4-8	4-8	
TMR-The Medical Record	✓	Q-1	✓	✓	✓	✓	4-8	4-8	4-8	

Coding systems employed	Structure and organization										Data access									
	Standardized data dictionary	Character-based graphics	Object-oriented text	Tables	Graphics	Audiovisual updates in 1/4 seconds or less	Highlight keywords by title	By type of user	By specific user summary	Multiple parts of record multiple pages	By data	By problem	By test search	By family	Keyboard	Mouse	Light pen	Touch screen	Voice	One entry updates multiple components
1.7																				
1.5.7																				
1.7																				
1.4.7.8																				
1.7.8	8																			
1.2.3.6.7.8																				
1.7.8	8.9																			
1.7																				
1.7																				
1.4.7.8.10																				
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1.2.3.4.5.6.7.8																				
1.6.7.8	8																			
1.2.3.4.5.6.7.8																				
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1.3.6																				
1.7																				
1.7																				
1.4.7.8	8																			
1.2.7.10																				

Confidentiality	Assurance and integrity									
	Access restrictions	Access restrictions	Access restrictions	Access restrictions	Access restrictions	Access restrictions	Access restrictions	Access restrictions	Access restrictions	Access restrictions
1.7										
1.5.7										
1.7										
1.4.7.8										
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1.6.7.8										
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1.7										
1.4.7.8										
1.2.7.10										

Key to symbols
 ● = Most or all of the elements (76 to 100 percent)
 ■ = Some of the elements (25 to 75 percent)
 ○ = Few or none of the elements (0 to 24 percent)

Key to coding systems and data dictionaries

1 = ICD-9
 2 = ICD-10
 3 = ICPC
 4 = UMLS
 5 = DRG
 6 = ICHPPC
 7 = CPT-4
 8 = SNOMED
 9 = NDC
 10 = other

[illegible]

* Questions not answered on survey returned

[illegible][illegible]

Dr. ADDINGTON. The college staff also is available to respond directly by telephone to inquiries regarding this issue. At our April annual meeting, which was attended by 10,000 physicians, special Y2K educational sessions were repeatedly conducted by the college's Medical Informatics Department. A press conference was also held, and the Y2K Tool Kit was widely distributed.

Nor are we finished with this campaign. The Y2K webpage continues to be updated to reflect more recent information, the growing number of physicians who have initiated corrective steps and the evolving nature of Y2K-related problems.

We have not attempted to monitor the number of physicians who have evaluated or corrected their practice computer systems. That number changes constantly. Various government and other surveys indicate that a fairly high level of physician awareness now exists regarding Y2K and that most physician practices have undertaken some corrective measures. Time, however, is running out for those who have not, and the available options are rapidly declining.

Later this week, we meet with all the Governors, which is our grassroots organization, and I will be stressing that their systems need to be tested.

As the year-end deadline swiftly approaches, our attention is shifting to problems potentially faced by those practices that have undertaken corrective measures but not yet tested to be sure those measures will actually work. Nationwide Insurance, which processes Medicare Part B claims for 7,500 physicians and other electronic claims submitters, recently indicated that fewer than 10 percent of its clients had completed testing as of September 13th. Of those who had tested, 56 percent proved unsuccessful on the first try. Only 6 percent of those with critical date failures have been able to resolve the errors and complete the testing. They may or may not have to replace their supposedly Y2K compliant systems.

The college is very concerned, therefore, that too many physicians may be relying on vendor certifications that the vendor's software is Y2K compliant without requiring testing that all parts of the system are, in fact, compliant. While we think it risky for non-experts to try rolling forward the dates on computer systems to determine their Y2K readiness, it is imperative that even new systems, as well as those supposedly corrected for Y2K, be tested by experts to confirm the operational success of the corrective measures. Such requisite testing must include all individual software and hardware components of a system.

In matters like electronic claims, problems can arise in the interface between two organizations' supposedly Y2K corrected systems. Even when such problems are correctable, the first test may fail in a high percentage of cases, thus requiring some debugging of a physician's system. Only a finite number of computer technicians are able to help with this debugging process. Therefore, we are concerned that delayed testing by medical practices might lead to a last minute debugging demand that could overwhelm available resources.

We will be doing everything we can to make our members aware

of the need for testing and the importance of performing that testing now.

I'll be pleased to respond to your questions. Thank you.

Mr. HORN. Thank you very much, Dr. Addington.

[The prepared statement of Dr. Addington follows:]

Draft Testimony for Dr. Whitney Addington for the September 27, 1999 hearing on the Y2K Readiness of the Medicare program.

Good afternoon. I'm Dr. Whitney Addington. I am an internist and pulmonologist in Chicago, Illinois and am president of the American College of Physicians—American Society of Internal Medicine. ACP—ASIM is the nation's largest medical specialty organization. Many of the more than 115,000 members of the College are involved in internal medicine practices in which they constantly rely on computer technology which provides invaluable assistance in the provision of patient care as well as in the administrative aspects of running the medical practice. The subcommittees are to be commended for their ongoing focus on the serious challenges posed by Year 2000 (Y2K) readiness issues.

ACP-ASIM was quick to recognize the threat posed by Y2K. Unless our members addressed it, we knew it could disrupt their practice operations and thereby impede delivery of vital health care services to their patients. As early as March, 1998 our monthly newsletter, the ACP-ASIM Observer, ran a full length article posing the question "Is your practice prepared for the millennium bug?"

Early in 1999, ACP-ASIM mobilized a College-wide information campaign to alert, inform, and assist our membership in addressing the Y2K threat. Articles have appeared in most of this year's issues of the Observer. The topic has been further publicized through our state Chapters. ACP-ASIM's Center for a Competitive Advantage created a special Y2K web page on our web site, www.acponline.com, and published a Y2K Tool Kit to give members detailed, practical information and guidance on how to address the issue. Staff also is available to respond directly by telephone to inquiries regarding this issue. At our April annual meeting, which was attended by 10,000 persons, special Y2K educational sessions were repeatedly conducted by ACP-ASIM's Medical Informatics Department; a press conference was held; and the Y2K Tool Kit was widely distributed.

Nor are we finished with this campaign. The Y2K web page continues to be updated to reflect more recent information, the growing number of physicians who have initiated corrective steps, and the evolving nature of Y2K related problems. We have not attempted to monitor the number of physicians who have evaluated or corrected their practice computer systems. That number changes constantly. Various government and other surveys indicate that a fairly high level of physician awareness now exists regarding Y2K and that most physician practices have undertaken some corrective measures. Time is running out, however, for those who have not; and the available options are rapidly declining.

As the year-end deadline swiftly approaches, our attention is shifting to the problems potentially faced by those practices that have undertaken corrective measures but not yet tested to be sure those measures will actually work. Nationwide Insurance, which processes Medicare Part B claims for 7500 physicians and other electronic claim submitters, recently indicated that less than 10% of its clients had completed testing as of September 13th. Of those who had tested, 56% proved unsuccessful on the first try. Only

60% of those with critical date failures have been able to resolve the errors and complete their testing. The remainder may have to replace their supposedly Y2K compliant systems.

ACP-ASIM is very concerned therefore that too many physicians may be relying on vendor certifications that the vendor's software is Y2K compliant, without requiring testing that all parts of the system are in fact compliant. While we think it risky for non-experts to try rolling forward the dates on computer systems to determine their Y2K readiness, it is imperative that even new systems, as well as those supposedly corrected for Y2K, be tested by experts to confirm the operational success of the corrective measures. Such requisite testing must include all individual software and hardware components of a "system."

In matters like electronic claims, problems can arise in the interface between two organizations' supposedly Y2K corrected systems. Even when such problems are correctable, the first test may fail in a high percentage of cases, thus requiring some "debugging of a physician's system. Only a finite number of computer technicians are available to help with this debugging process. Therefore we are concerned that delayed testing by medical practices might lead to a last minute "debugging" demand that could overwhelm available resources.

We will be doing everything we can to make our members aware of the need for testing and the importance of performing that testing now! We appreciate the Committee's interest in this vital matter and the opportunity to testify. Forums such as this one that call attention to the critical need for timely testing and other health care related Y2K readiness issues serve an essential public service.

I would be pleased to respond to your questions.

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Mr. HORN. Our next witness is Fred Brown, The vice chairman of BJC Health Systems, senior advisor on the President's Council of Y2K Conversion. He's also chairman of the Board of Trustees of the American Hospital Association.

Thank you for coming.

STATEMENT OF FRED BROWN, VICE CHAIRMAN, BJC HEALTH SYSTEMS, SENIOR ADVISOR, PRESIDENT'S COUNCIL OF Y2K CONVERSION, AND CHAIRMAN, BOARD OF TRUSTEES, AMERICAN HOSPITAL ASSOCIATION

Mr. BROWN. Thank you very much, Chairman Horn, Chairwoman Morella and Congressman Turner.

As we approach the Y2K period, January 1st, just 95 days away, the American Hospital Association and its members are continuing to be committed to ensure smooth delivery of high-quality health care, because the bottom line is patient safety and patient care.

Hospitals of all kinds in every community across America have been diligently preparing all aspects of their operations for Y2K. The focus has been on medical devices and equipment, information systems and infrastructure, and there's every indication as we have coordinated our activities through our State hospital associations and hospitals across the country that the hospital sector will be ready for Y2K, and our own survey information makes that clear.

So does the report issued earlier this year by the HHS Inspector General's office; and the Healthcare Year 2000 Readiness Assessment #2, conducted for HCFA, identified hospitals as the health care sector that is among the most aggressive in meeting the Y2K deadlines.

And as hospitals continue to perform this inside preparation, we are also deeply involved in efforts to communicate with our communities. We're helping to support and be very active in the community conversations being conducted across the country, and we've encouraged every hospital in every part of this country to get involved with their communities in terms of communication. The hospitals are working with their local agencies, their police, fire, utilities and, most recently, there was a recent drill in California. 372 hospitals took part. This drill was for the purpose of Statewide coordination of communications systems, the transmission of data about available hospital beds and the hospital's own contingency plans for Y2K, and all of these test were completed successfully.

These extensive preparations that the hospitals are undergoing cost money, and we expect to spend somewhere around \$8 billion to become Y2K compliant, and this huge sum is made even more daunting because it comes on top of the Balanced Budget Act's \$71 billion in Medicare hospital payment cuts.

We commend HCFA for announcing that the fiscal year 2000 PPS update would not have to be delayed while the agency's computer systems are prepared for Y2K. HCFA has tackled this problem in a way that will prevent nearly \$300 million in payment updates from being held back from hospitals who badly need them.

We do remain concerned, however, that HCFA has not disclosed its contingency plan to prevent a systematic failure in claims processing as a result of Y2K, and it is imperative that HCFA establish a fail-safe contingency plan in case HCFA or its contractors' pay-

ment mechanisms fail at the turn of the century. And such a plan also would provide payment to facilities which, for reasons beyond their control, are not able to follow routine procedures in getting claims to their fiscal intermediaries.

A system of advance payments based on past payment levels is one way to prevent this from happening and would ensure that hospitals have the resources necessary to care for Medicare patients, and we'd urge Congress to enact legislation, if needed, to authorize such a system.

As hospitals, we are cooperating with HCFA as we have with the Food and Drug Administration; and as this issue of future date testing comes about, we are, through our communications with our State hospital associations and all of our hospitals across the country, encouraging them to do the necessary testing to be assured that they are Y2K compliant.

In conclusion, Mr. Chairman, Y2K will obviously affect every aspect of America's life. However, few, if any, are as important as health care, and American hospitals and their health systems, their State associations and the AHA are partners in the effort to prepare for Y2K, and we encourage Congress and the various agencies to continue working with us as well, and we pledge our cooperation during these last 95 days and in the future together to assure a smooth and healthy transition to the new millennium.

Thank you very much for the opportunity to testify.

Mr. HORN. Thank you very much.

[The prepared statement of Mr. Brown follows:]



**Testimony
of the
American Hospital Association
before the
Subcommittee on Government Management, Information and Technology
of the
Committee on Government Reform
and the
Subcommittee on Technology
of the
Committee on Science
of the
United States House of Representatives
on
The Impact of the Year 2000 on Medicare Providers
September 27, 1999**

Mr. Chairman and Madam Chairman, I am Fred Brown, vice chairman of BJC Health Systems in St. Louis and chairman of the Board of Trustees of the American Hospital Association (AHA). I am here on behalf of the AHA's nearly 5,000 hospitals, health systems, networks, and other providers of care. I am also privileged to be a Senior Advisor to the President's Council on Year 2000 Conversion, representing the hospital field.

The AHA and its members are committed to continuing the smooth delivery of high-quality health care, at the turn of the century and beyond, uninterrupted by the calendar change that will occur at midnight December 31. We appreciate this opportunity to update you on hospitals' efforts, and to outline the roles of the Health Care Financing Administration (HCFA), other federal agencies, Congress and the AHA.

Center for Public Affairs
Center for Health Care Leadership

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HOW HOSPITALS ARE PREPARING

America's hospitals and health systems are working very hard to prepare all aspects of their operations for the date change: devices and equipment, information systems, and infrastructure. For example, hospitals have been taking the following steps to ensure the safety and reliability of their services at the turn of the century:

- Taking inventory of all equipment and devices and support systems – identifying which may be potentially affected by Y2K.
- Determining which are actually affected and how their functioning will be altered – this is done through contact with the manufacturers and vendors to get the results of their assessments and testing.
- Taking follow-up action if those devices or equipment are affected by Y2K – depending on the device or equipment, this may mean repairing, taking out of service, or training staff on how to use the equipment going into the new year.
- Developing contingency plans – even with all the advance preparations, hospitals still need to anticipate the unforeseen.

Information systems are another priority for America's hospitals. At my health system, for example, Y2K has been the focus in the information systems department for more than two years. The first priority of all Y2K projects is, of course, any equipment that is directly related to patient care. We feel comfortable with our progress so far. We will continue working diligently throughout 1999 to ensure that the Year 2000 change occurs with minimal disruption in our facilities. Since the last half of 1997, our information services department's primary focus has been Y2K. Dozens of individuals have been solely dedicated to examining computer codes,

programs and computer-assisted medical devices to ensure that they will work in the new millennium.

Along with information services, BJC's material services department is playing a critical role in our Y2K compliance. Materials services is primarily working with vendors and their related equipment, and with clinical engineering, which oversees all patient-related equipment in BJC's hospitals and facilities.

PROGRESS ON Y2K COMPLIANCE

As a result of this kind of diligent preparation, the majority of the nation's hospitals expect to be completely "Y2K compliant" by January 1, 2000. Based on the results of a nationally representative survey we conducted, almost all of the remainder expect to be sufficiently prepared that critical operations will not be affected. At the time the survey was conducted last Spring, more than 95 percent of hospitals expected their devices, information systems, and infrastructure to be Y2K compliant by year end or expected no problems in their operations.

In the survey, hospitals were asked whether their medical devices would be compliant, or noncompliant with no adverse effects. This is important, because some medical devices could technically be labeled non-compliant, even though they will operate -- and do so safely -- during and after the date change.

For example, an EKG machine may provide accurate heart rate information, while the strip recording the test information notes the date of the test incorrectly. In such cases, medical

personnel would simply write the correct date onto the readout. In no way would this machine be a danger, but it technically would be labeled non-compliant because it did not recognize the date change.

A similar report issued earlier this year by the Health and Human Services' Office of Inspector General (OIG) also indicates high confidence in hospital Y2K readiness by the end of the year. The OIG report reaffirms what we've been hearing from our hospitals on their Y2K efforts. The fact that hospitals represented the largest percentage of responses to the OIG report shows their willingness to be forthcoming about their Y2K preparation.

Our confidence in the accuracy of our polling methods is shared by the Medicare Payment Advisory Commission (MedPAC), the federal body that advises Congress on issues affecting the Medicare program. MedPAC relies on other AHA member surveys when the commission deals with Medicare payment issues.

And the Healthcare Year 2000 Readiness Assessment #2, prepared for HCFA by the Rx2000 Solutions Institute and released in January, identified hospitals as the healthcare sector that is "among the most aggressive towards meeting its Year 2000 deadlines."

Taken together, all of these – the AHA survey, the OIG survey, and the Rx2000 survey – point toward the same conclusion: hospitals expect to be ready to meet the Y2K challenge.

We were pleased that last week's Senate Special Committee report – released 100 days before the date change – acknowledged the work hospitals are doing to prepare for Y2K. The committee noted that urban and suburban hospitals are “demonstrating a commitment to Y2K compliance,” and expressed confidence in their abilities to be ready for Y2K. While the committee expressed concern about the financial ability of rural and inner city hospitals to meet the Y2K challenge, those hospitals are no different in their approach to Y2K than others. All hospitals – rural, inner city, urban, suburban – are zeroing in on systems directly related to patient care, because they know that the patient is what matters most. Those efforts will continue during these last 100 days.

THE COSTS OF COMPLIANCE

What are the costs of Y2K compliance expected to be? America's hospitals and health systems expect to spend somewhere around \$8 billion to become Y2K compliant.

Smaller hospitals, those with fewer than 100 beds, will spend close to \$1 billion on Y2K fixes, or an average of \$435,000 each. Hospitals with between 100 and 300 beds will spend \$2.5 billion, an average of \$1.2 million each. Hospitals with 300-500 beds will spend nearly \$2 billion, or \$3.4 million each. The largest amount of spending, \$2.2 billion, will occur at hospitals that have more than 500 beds.

Much of the \$8 billion that hospitals expect to spend on Y2K compliance will be spent this year. This presents an immense challenge, because that spending comes on top of significantly declining Medicare reimbursement brought on by the Balanced Budget Act (BBA) of 1997. The

BBA reduced payments to hospitals by \$71 billion over five years. Further reductions, like those proposed in the Administration's recent budget proposal, would make a terrible burden even more onerous.

We urge your support for two bills that would help ease this burden. In the House, Rep. Nita Lowey (D-NY) has introduced H.R. 2266, and a similar bill, S. 1609, was introduced last week by Sen. Kay Bailey Hutchison (R-TX). This legislation, the American Hospital Preservation Act, would increase the inpatient PPS update levels by 0.5 percent for each of the next three years to help hospitals cope with the BBA, and with the costs of preparing for the Y2K date change. This legislation is consistent with recommendations made by the Medicare Payment Advisory Commission earlier this year, when they assumed that hospital costs would increase by 0.5 percent because of Y2K.

CONTINGENCY PLANNING

America's hospitals and health systems are in the business of dealing with the unexpected. They are used to mobilizing quickly in the face of floods, hurricanes and potentially disastrous events that are an unfortunate fact of life. There is no reason to believe that they will not also be ready for the Year 2000.

Patient safety is the highest priority for hospitals and health systems. Our ultimate contingency plan is to take care of patients at the bedside -- as we do 24 hours a day, seven days a week, 365 days a year. Hospitals are examining a range of options, such as having extra staff available for

the date change and for the few days after, and not scheduling elective surgeries, thus ensuring that only people who absolutely need to be in the hospital are there.

This is not being done out of a sense of panic, but to provide the broadest latitude for dealing with the unexpected. Some devices and equipment can only be operated in real-time – that is, after the clock turns from Dec. 31 to Jan. 1 – and hospital personnel will literally watch this equipment's clock change to ensure that it works properly before allowing it to be used for patient care. The ultimate contingency plan is to provide care the old-fashioned way in the unlikely case of a modern medical device impeding care.

Some outside factors could also have an indirect effect on how our people deliver care. Specifically, it is incumbent upon hospitals to prepare now to respond to the potential loss or disruption of any essential hospital processes or services. They are directing their efforts both internally across hospitals' facilities, and externally within communities. This includes working with such entities as utility companies, emergency medical services, and other health care providers.

In addition, the AHA is working with the President's Council on Year 2000 Conversion on the Year 2000 Information Coordination Center, which was created in June. Information available from the center can serve as an early warning system, enabling hospitals and other providers to manage their resources and responses better than if they try to handle things alone.

thousands of devices and pieces of equipment, the information about whether these devices are Year 2000-compliant must come from the manufacturers.

The AHA, the FDA and the manufacturers and their representatives have been collaborating to ensure that the Federal Year 2000 Biomedical Equipment Clearinghouse is receiving accurate and useful information. This information, easily available on the agency's Web site at www.fda.gov, has been improved significantly.

We appreciate FDA's continuing efforts to closely monitor the reporting and availability of information. It is also important that the FDA play a proactive "rumor control" role, monitoring such arenas as the Internet and the media to make sure that information that circulates about the effects of Y2K on medical devices and equipment is accurate, and correcting it when it is wrong. Some of the more recent information available on the FDA Web site takes a good step toward helping distill what is being learned through the clearinghouse.

THE SUPPLY CHAIN

The AHA also is working with the President's Council on Year 2000 Conversion, as well as with other associations and sectors of the health care field, to make sure the availability of drugs, pharmaceuticals and medical supplies will continue as needed into the new year. The exchange of information between hospitals and their suppliers, as well as joint contingency planning, are essential steps to avoid the hoarding or stockpiling that would lead to shortages. The AHA is focusing on a broad range of other suppliers to get the vendor information our members need, from medical device manufacturers to pharmaceutical and other medical supply companies.

Experts in the field are advising health care organizations to employ a risk management methodology to identify their most critical supply issues, focusing on those that are critical to patient health. Hospitals must know how their suppliers and manufacturers plan to deal with potential disruptions to the flow of medical and surgical supplies, or the raw materials necessary to produce those supplies.

Prudent contingency planning will require an exchange of information between suppliers and providers. In the absence of reliable information, hoarding and stockpiling may occur, creating the very supply chain disruptions that everyone should be working to avoid.

THE ROLE OF CONGRESS

As I have described, health care providers and the associations that represent them are devoting significant time, resources and energy to preventing potential Year 2000 problems from affecting patient safety. It is essential that we all look for ways to help prepare America's health care system for the turn of the century, and Congress can play an important role. Your attention to this issue, through hearings such as this, reflects your understanding of the gravity of the situation.

We ask you to help America's health care system avoid Year 2000 problems by taking several other steps:

- Congress should provide the FDA with any additional resources it needs to get needed information to the health care field, including serving a "rumor control" function regarding devices.

- Congress should insist that, if necessary, HCFA use its authority to make advance payments under Medicare. These payments, based on past payment levels, should be implemented to ensure adequate cash flow for providers in case carrier and fiscal intermediary payment systems fail, or other disruptions prevent hospitals from following the normal claims processing routines.
- Support the Lowey/Hutchison legislation to increase inpatient PPS by 0.5 percent in FY2000.

THE ROLE OF AHA AND OTHER ASSOCIATIONS

Hospitals and health systems face the same kinds of Y2K concerns as other critical sectors of our nation. However, hospitals are unique. They have a special place in America's social services safety net. Every community in America relies on its local hospital to be ready to provide high-quality health care services on demand, 24 hours a day. It is therefore very important that the public understand that hospitals have been very aggressive in their efforts to ensure the seamless delivery of health care services before, during, and after the turn of the century. And it is important for hospitals to have a contingency plan in place.

Protecting Public Confidence, Staying Abreast of Progress

The AHA, in collaboration with our state, regional and metropolitan associations and other key strategic partners, is working hard to stress to our member hospitals the importance of managing the Y2K issue from a public confidence perspective. We have developed tools to counsel hospitals and health systems about how to talk with the public about Y2K and health care. A Y2K Communications Action Kit was distributed to our members, who adapted the materials in the kits for use in their communities.

We are continuing our efforts to make sure that hospitals and health systems have the latest information on what their colleagues and other organizations are doing to address the Y2K problem. And we are helping them learn about potential solutions.

Our State Issues Forum, which tracks state-level legislative and advocacy activities, is hosting biweekly conference calls dedicated entirely to the Year 2000 issue. On these calls, state hospital association and AHA staff share information.

Articles are appearing regularly in *AHA News*, our national newspaper, and several other national publications published by various AHA membership societies. Several of these societies, such as the American Society for Healthcare Engineering, the American Society for Healthcare Risk Management, and the Association for Healthcare Resource and Materials Management, are helping their members attack the millennium bug in their hospitals.

In addition, the AHA Web site has become an important clearinghouse of information on the Year 2000 issue, including links to other sites with information that can help our members. And most recently, we sent an AHA Y2K Advisory to every AHA member, also available on our Web site, detailing how hospitals can put together a responsible course of action in the face of stockpiling concerns. In the advisory we advised hospitals that stockpiling and hoarding can cause the very shortages that they should be trying to avoid.

CONCLUSION

Mr. Chairman, the Year 2000 issue will affect every aspect of American life, but few, if any, are as important as health care. America's hospitals and health systems, their state associations, and the AHA are partners in the effort to prepare for the Year 2000. We encourage Congress and our federal agencies to work with us as well. Together, we can ensure a smooth – and healthy – transition into the new millennium.

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Mr. HORN. Our next witness is Elizabeth Wilkey. She's the electronic data interchange coordinator for Blue Cross and Blue Shield of Georgia.

Thank you for coming.

STATEMENT OF ELIZABETH WILKEY, ELECTRONIC DATA INTERCHANGE COORDINATOR, BLUE CROSS AND BLUE SHIELD OF GEORGIA

Ms. WILKEY. Thank you.

Chairman Horn, Chairwoman Morella, Congressman Turner and distinguished subcommittee members, thank you for the invitation and the opportunity to speak with you today on the Georgia Part A intermediary community outreach and testing progress for the millennium.

For the past 18 months, I've been referred to in the State of Georgia as the Georgia blues Y2K evangelist. I've traveled throughout the State preaching a Y2K get ready sermon to vendors, clearinghouses, providers, billing services, the Georgia Hospital Association, the Health Care Finance Administration, anybody and everybody that would listen to me.

In Georgia, we have conducted seminars and conferences which include but are not limited to what you need to do to prepare institutional providers, claims, products and systems for the millennium. I would like to extend a special thanks to HCFA Central for their participation, encouragement and support in our first Y2K vendor clearinghouse conference that was held in Atlanta, Georgia, on June 2nd, 1999. It sent a message to our vendors, clearinghouses and billings services, and that message was we need your help. Let us test this monster known as the millennium, Y2K, before the year 2000, and that's just what we've been doing.

I want to thank the vendors and the clearinghouses and the billing services and the providers for participating in testing and future date testing. As a result of our testing efforts, we were able to test with customers representing 98.25 percent of our vendor provider community, and we are now pursuing the remaining 1.75 percent.

There are certain advantages to this Y2K testing monster. If you would test and vendors get into the swing of testing with their providers, it will eliminate the element of surprise.

It allows contractors, vendors, clearinghouses, providers, billing services to test their hardware and software in a future-dated environment.

It assures and shows assurance to the vendors and providers that they have the ability to submit electronic claims into the year 2000.

It gives the vendors and providers a comfort level of the contractor's ability to accept year 2000 claims.

It gives the vendors and providers assurance that the contractors edits will work properly into the year 2000.

It will create a proactive—not reactive, but proactive approach to resolving any issues before the millennium is here because you will have time to correct your systems before you go into the millennium.

It will enable the contractors and the vendors and the billing service to create a log of Y2K issues, and in that log not only would they have the issues but they would have the resolution to those issues, what should happen if, and how to resolve if we see this into the year 2000.

It will aid providers in testing and contractors in meeting their Y2K certification efforts.

Now, in our testing environment and testing for the year 2000, there were certain findings that we had great concern about. There were problems that we experienced with future-date testers, that most of them were very common errors that we see on a day-to-day basis.

However, there was one that we had great concern with, and that's where we uncovered that one of our vendors' front-end system had a problem when it came to a windowing technique, and that windowing technique did not populate our electronic format properly to show month/month, day/day, century/century, year/year dates of service properly in those fields, but it really showed 99/99/99 as the dates of service. Now, you've got to understand that this was one of those vendors that truly did not want to test with us, and the provider and I had to convince them and persuade them that they needed to do this testing. Today, that vendor is very happy that they did because now they can say I'm being proactive in resolving this Y2K issue before the year 2000.

Now, I don't know about other States but I can truly tell you that I believe the State of Georgia is ready for the millennium. We're ready to proceed with our testing and getting those providers that have not tested tested; and, again, I thank you for the opportunity to share with you the Y2K testing experiences we've had in the State of Georgia.

Mr. HORN. Thank you very much. I hear you've done a terrific job throughout Georgia. So thank you for coming and sharing some of those experiences with us.

[The prepared statement of Ms. Wilkey follows:]



TESTIMONY OF
BLUE CROSS AND BLUE SHIELD
OF GEORGIA



On Year 2000 challenges - Medicare Provider Testing
for the

Subcommittee on Government Management,
Information and Technology
Committee on Government Reform
U. S. House of Representatives

Presented by:
Elizabeth A. Wilkey
EDI Project Coordinator

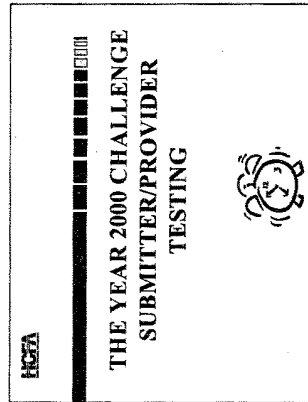
September 27, 1999



BIOGRAPHY

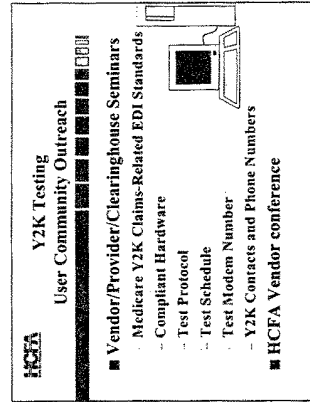
Elizabeth A. Wilkey
EDI Project Coordinator
Blue Cross Blue Shield of Georgia

Elizabeth has 32 1/2 years of progressive healthcare computer and management experience. She has designed, installed, trained and serviced electronic claims systems throughout the state of Georgia. Extensive experience in all third party programs as Medicare, Medicaid, Blue Cross Blue Shield, Commercial, Campus and Manage Care. Elizabeth has served the Georgia Blue Cross Plan EDI Vendor Community since 1985 and the Provider Community since 1980. She is presently responsible for Y2K vendor/provider community outreach and testing.

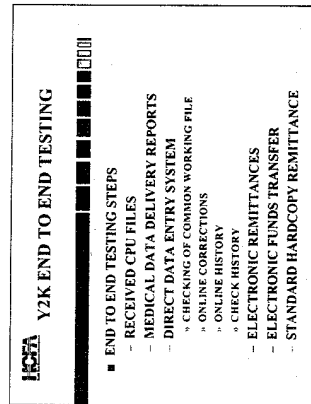


The Millennium is coming get ready, get ready. Chairman Horn, Chairwoman Morella, distinguished Subcommittee members thank you for the invitation and opportunity to speak with you today about the Georgia Medicare Part A Intermediary community outreach and testing progress for the millennium. Now I don't know about you, but I believe I am ready. For a few minutes I would like to share with you what we have done in the state of Georgia to prepare and test for the millennium.

For the pasted 18 months, I have been referred to as the Georgia Blues Y2K Evangelist. I have traveled throughout the state of Georgia preaching a Y2K get ready sermon to vendors, institutional Providers, Clearinghouses and Billing Services.



In Georgia we conduct seminars/conferences, which included, but are not limited to what needs to be done to make sure the Institutional providers claims products are ready for the millennium. We discussed provider awareness, renovation, contingency plans-paper is not an option and testing. A special thanks to HCFA Central for their participation, encouragement and support, in our first vendor/clearinghouse conference, which was held in Atlanta, Georgia on June 2, 1999. It sent a message to our partners (vendors, clearinghouses and billing services) that said we need your help. Let's test this monster known as the millennium, Y2K-Year 2000. We knew our providers/vendors were already submitting the millenniums ready Medicare EDI standards, Electronic UB92 V 5.0, ANSI X12N835 3051.4A or 3051.3A - electronic remits. The millennium ready PC software. We were told the provider's hardware was compliant for the millennium.

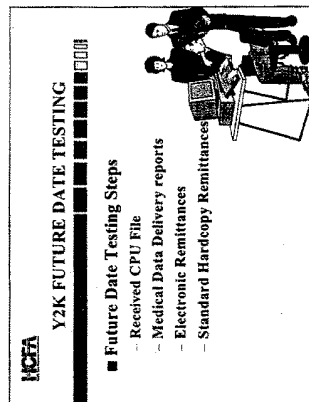


On May 15 it was time to test the waters. In other words. It was time to discuss and actually schedule End to End and Future Date Testing with our providers/vendors/clearinghouses.

There was specific protocol setup to test with Georgia Medicare part A during the periods of time that has been designated as End to End testing for re-certification. End to end testing began June 28, 1999 and ended August 4, 1999.

Two important criteria we considered when choosing our testing partners.

- A provider/vendor that could IPL (Initial Program Load) their environment to a future date and that could:
 - Submit scripted claims for establish test beneficiaries data that we had or could load into the Common Working File beta host site prior to June 14, 1999. I thank NDC, SSL, Gambro, DCI and EDI services for participating in the End to End testing.
- The June 28 test was to test our front end edits after we had re-IPL the system. We had to assure ourselves and HCFA that we could stop bad data from being received and error the data back to the submitters.
- The electronic claims transmission dates of 6/29 and 7/21, were for re-certification and was taken through the following steps received the CPU file process through our front end system, generate (MDD) reports - electronic accepted/rejected batch and error claims listing, forward file to the FISS.
- Gave provider access to the Direct Data Entry to perform checking of the common working file, online correction, online history checks, and check history.
- Payment of claims submitted generated an electronic remit, which the submitter retrieved. We tested EFT with our bank and the providers, we advised to test EFT with their bank. We generated a standard hard copy remittance for the provider to compare to the electronic remittance.



Future date testing began on 06-28-1999 and will end on 11-01-1999. Future date testing will consist of receiving the vendor/provider file, generating the accepted/rejected or error claim listing (MDD Reports), and producing the electronic remittances. We have received and processed five transmission files for future date testing.

- June 29, 1999
- July 21, 1999
- August 17, 1999
- September 01, 1999
- September 13, 1999



Advantages of Y2K Testing



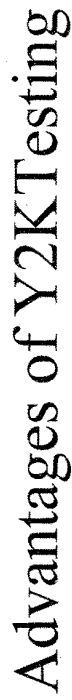
- Eliminates the element of surprise
- Test Hardware and Software in a future dated environment
- Assurance of Vendor/Provider ability to submit claims in the year 2000
- Vendor/Provider comfort level of the contractor's ability to accept Year 2000 claims.



Advantages of Y2K Testing



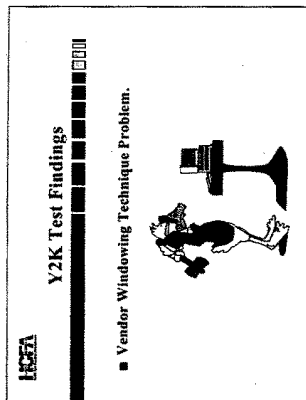
- Vendor/Provider assurance that contractor's edits work properly
- Create a Proactive approach to resolve Y2K Issues
- Log of Potential Y2K Issues
- Aid contractors in their Y2K certification efforts



■ Identify and resolve potential Y2K Issues

- **System connectivity**
- **System protocol**
- **Electronic claims submission and processing**
- **Electronic remittance**
- **Provider's Remittance Upload Programs**
- **Direct Data Entry system features**





The problems we experience with the future date test basically was common every day problems with files, except when we uncovered through our front-end edits, that a vendor's windowing technique did not work.

It created invalid data in the 20 record-dates of services from and though dates populated and showed 99/99/99. Now this was a vendor that did not want to test and the provider and I had to persuade them to test. Now that vendor is certainly glad they tested because now they can be proactive in resolving this problem prior to the millennium.



Y2K TESTING EXPERIENCES



- Vendors/Providers cannot relax front end edits to submit scripted claims
- Some providers cannot IPL their internal system to submit future dated claims
- Providers have system/format constraints that will not allow the print image to display eight position date fields
- All payers will not change format to receive eight position date fields



Vendors/Clearinghouses Y2K

Testing



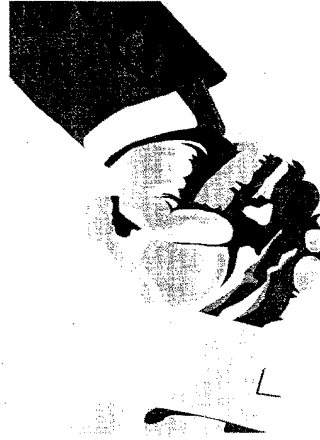
- CPSI
- CANDLER SOFTWARE
- COMPUTER MART
- DCI
- EDI SERVICES - BUSINESS OPERATION
- ENVOY - NDC
- FRESENIUM MEDICAL
- GAMBRO
- HEALTH SYSTEM RESOURCES

HCFM Vendors/Clearinghouses Y2K

Testing

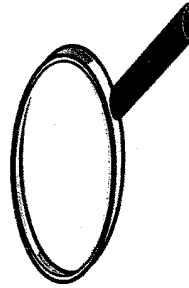


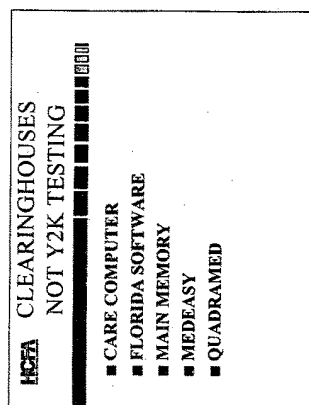
- HEALTH LOGIC
- MEDICAL MANAGER
- MEDITECH (test scheduled)
- SMS
- SSI





- **End To End testing**
 - Provider representation 97.54%
- **End To End and Future Date Testing**
 - Provider representation 98.25%





These vendors have not tested, they represent 1.75% of our provider community.
 The providers have been contacted and have been advised that they need to test by 11-1-99.

Mr. HORN. We now have our last witness, and it's Mr. Baker. Mr. Baker heads the New York-based Medicare Rights Center as their executive vice president. I'm curious, Mr. Baker, was that funded by Medicare or was it funded by a foundation? It's a good idea. You don't lack for customers.

Mr. BAKER. No. We certainly do not. You're right. We're funded in part by a grant from the Health Care Financing Administration that's administered by the New York State Office for the Aging and then we fund-raise through foundations, through individuals and through others, but all of our services are provided free of charge to people on Medicare and their families.

Mr. HORN. Now, is that limited to New York or is it regionwide?

Mr. BAKER. We do have a contract in New York State to take calls. However, we take calls from across the country on various toll-free hotlines.

Mr. HORN. There is a toll-free line?

Mr. BAKER. Yes, there is.

Mr. HORN. What is the number?

Mr. BAKER. 1-800.

Mr. HORN. 1-800.

Mr. BAKER. 333.

Mr. HORN. 333.

Mr. BAKER. 4114.

Mr. HORN. 4114. The reason I ask is, there's 435 members of the House whose caseworkers might like to call you.

Mr. BAKER. Yes. I hope they all don't decide to call tomorrow. I'll get in trouble.

Mr. HORN. You've got 50,435, and if the Senate gets in on it, you've got another hundred.

Well, thank you. Go right ahead.

**STATEMENT OF JOE BAKER, EXECUTIVE VICE PRESIDENT,
MEDICARE RIGHTS CENTER**

Mr. BAKER. Sure. Thank you for inviting me today, Chairman Horn, Chairwoman Morella and Congressman Turner. I am the executive vice president of the Medicare Rights Center. We're a national not-for-profit organization based in New York. We help seniors and people with disabilities and their families who are on Medicare through telephone counseling, through education efforts and through our public policy work. Last year, we fielded more than 50,000 calls, as you had mentioned, from people on Medicare and their families, and we handled or directly intervened in over 10,000 of those cases.

In February, we also testified with regard to the Y2K issue and Medicare, and today, 6 months later and 95 days to the millennium, we still have many of the same concerns.

Our foremost concern is that the 40 million people on Medicare, seniors and people with disabilities, have access to ongoing health care services through the Medicare program. We note that the Medicare and year 2000 booklet that was put out by HCFA just recently in its mailing to all 40 million Medicare beneficiaries does have information on Y2K. We understand that they will not, and they are told in that booklet, that they will be not be responsible for health care costs that may be caused by Y2K computer glitches.

However, there's no mention of how this advice might help them if they cannot get that care in the first place, and that's our major concern.

They're given a phone number, 1-800-MEDICARE, to call if they have trouble regarding Y2K issues. I note that, right now, with 1-800-MEDICARE and the Medicare Plus Choice program, frequently our organization is receiving inappropriate referrals and a lot of referrals from that particular number. So I question the ability of 1-800-MEDICARE counselors to handle these calls, and if they do refer them on to our organization, whether or not we have the resources or the training, frankly, with Y2K to handle those kinds of issues.

We're particularly concerned about the Medicare managed care program, or the Medicare HMOs. Unlike original Medicare, Medicare HMOs, as you know, require preauthorization for specialty care or other types of care, and we're most concerned about those 6 million beneficiaries who are enrolled in Medicare HMOs. Unless Medicare HMOs are Y2K compliant, and we heard earlier that many are not, we could see a significant increase in the number of people on Medicare who, because of system failures, can't get authorization for the care they need with potentially devastating consequences.

To consider a potential scenario, in February 2000, a woman on Medicare and in a Medicare HMO goes to the hospital with stomach pains. The doctor calls the HMO requesting approval to perform a Medicare covered procedure to alleviate that pain. The HMO does not have the systems in place to find the patient's name on its data base or can't use its system to determine whether the service is covered and, therefore, may not or does not authorize care. As a result, this particular individual would not get the care that she needed and which was Medicare—and which is Medicare covered.

We're also concerned about what kind of tools HCFA is going to use to hold Medicare HMOs accountable and to make sure that people on Medicare get the care they need. As we know, HCFA has asked all of its contractors to submit Y2K compliance forms, but, as you know, these statements are not admissible in a court of law, and in the past HCFA has lacked the staff and resources to properly oversee its contracting agents. The Y2K issue highlights the Federal Government's and HCFA's, in this case, limited ability to ensure that people on Medicare get the health care they need from the private health plans that contract with HCFA.

Second, we're also concerned about those programs that primarily help people with low incomes on Medicare, and these are the QMB, SLMB, QI1 and QI2 programs. We are already seeing a lot of access problems in those programs and particularly with regard to the interaction of State and Federal computer systems because these are programs that are administered by the States. The application process is already very slow and difficult, and so we feel that system failures may even further deny access to these important programs for people who are most vulnerable in the Medicare population.

Finally, I don't—in the Medicare population, we see a lot of questions from seniors on our hotline about prescription drugs and med-

ical equipment, and I don't know and I don't think that there has been the appropriate kind of outreach to them about how they should handle the prescription drug and medical equipment issues that might come up because of Y2K. I know this may be outside of HCFA's purview to a certain degree, but we do think that, as the major financer of health care in this country and particularly, of course, with the Medicare program, that HCFA should be taking some proactive steps to give consumers tips or other information about how to deal with prescription drugs or medical equipment contingencies or issues that may arise because of Y2K.

As you know, people on Medicare have already lived through many changes and hardships. Most do not own a computer. They're probably not overconcerned with the ability of computer systems to transition smoothly into the year 2000. We don't want to instill fear in them, but it's our job as professionals who work closely with them to educate our clients on how they can get the care they need and when they need it. We are telling our clients to ask their doctors, pharmacists and medical suppliers if they are Y2K. We hope that Congress and HCFA will do whatever possible to make sure that people on Medicare keep getting the care they need in the new millennium.

Thank you very much.

Mr. HORN. We thank you. That's a very helpful statement.

[The prepared statement of Mr. Baker follows:]

Statement of Joseph R. Baker III, Esq.
Executive Vice President, Medicare Rights Center

My name is Joe Baker. I am the Executive Vice President of the Medicare Rights Center, a national not-for-profit organization based in New York City. MRC helps seniors and people with disabilities on Medicare through telephone counseling, public education, and public policy work. MRC, under a contract with the New York State Office for the Aging, with funding from the Health Care Financing Administration, operates a telephone hotline. Last year, we fielded more than 50,000 hotline calls from people with Medicare questions and problems and provided direct assistance on a variety of Medicare issues to more than 10,000 callers. I thank the Subcommittee on Government Management, Information and Technology, and the Subcommittee on Technology for this opportunity to testify on how the transition to the year 2000 may affect people on Medicare. In February of this year, we testified before the House of Representatives Committee on Ways and Means about our concerns that people on Medicare would not get the care they need if the transition does not run smoothly. Today, six months later and only 95 days from January 1, 2000, we still have many of the same concerns.

We recognize that the United States government and corporate America are taking Y2K issues seriously, and we hope their efforts will result in a smooth transition to the year 2000 for everyone on Medicare. Otherwise, people on Medicare

could face serious health care access problems. Today, I am going to talk about some access to care problems that could arise.

First, at the federal level, our foremost concern is health care access for the more than 40 million seniors and people with disabilities in Medicare. We applaud HCFA's efforts to ensure that its own systems are Y2K-compliant. And we appreciate that HCFA has made an effort to educate providers about Y2K.

We are glad that the *Medicare & You 2000* handbook informs people on Medicare that they will not be responsible for health care costs caused by Y2K computer errors, but how will this advice help if they cannot get the care they need in the first place? We are concerned that the 1-800-MEDICARE number will not be able to handle a lot of calls and will not be able to provide needed assistance. If they simply refer cases to the SHIPs as they do with most problems, we are concerned that the SHIPs have not been given the resources to handle these additional cases.

However, because Medicare HMOs, unlike Original Medicare, require pre-authorization for specialty care, we are most concerned about access issues for the 6 million people who are enrolled in Medicare HMOs. HCFA cannot guarantee that Medicare HMOs will be Y2K-compliant. Unless the Medicare HMOs are Y2K-compliant, we could see a significant increase in the number of people on Medicare who, because of system failures, can't get authorization for the care they need, with potentially devastating consequences.

Consider this potential scenario: it is February 2000 and a Medicare HMO enrollee goes to the hospital with stomach pains. The doctor calls the HMO

requesting approval to perform a Medicare-covered procedure to alleviate her pain. The HMO does not have the systems in place to find the patient's name on its database or can't use the computer to determine whether the service is covered and therefore does not authorize the care. As a result, the woman does not get the care she needs.

We are concerned about how HCFA protects people in Medicare HMOs when they cannot get care because of Y2K system failures, and how it holds these HMOs accountable. What tools does HCFA have at its disposal to ensure that HMOs provide people on Medicare with the care they need?

HCFA has taken a strong first step in requiring all of its contractors to submit Y2K compliance forms. But, as you know, these statements are not admissible in a court of law. And in the past HCFA has lacked the staff and resources to properly oversee its contracting agents.¹ The Y2K issue highlights the federal government's limited ability to ensure that people on Medicare get the health care they need from the private health plans that contract with HCFA.

Second, at the state level, we are concerned that system failures caused by inadequate preparation for Y2K on the part of local Medicaid and Social Security offices will slow down or undermine the application process for QMB, SLMB, QI-1 and QI-2. These programs help many low-income people on Medicare pay for their health care coverage. The application process is already slow and difficult in many

states, and system failures could prevent even more people from getting these benefits and the care and coverage they need and are due. HCFA should institute a system to ensure that the Social Security Administration does not drop dually-eligible people from Medicare because of Y2K system failures at state Medicaid offices.

Finally, at the individual level, it is critical that those seniors and people with disabilities on Medicare who rely on prescription drugs and computer-chip driven medical equipment keep getting the medicine and equipment they need without interruption when the year 2000 begins. Although overseeing this continuity of care is outside of HCFA's legal jurisdiction, HCFA has an important role in educating people on Medicare on what they need to do to ensure that the transition to Y2K goes smoothly for them. We believe that HCFA should sponsor a series of public service announcements telling people on Medicare, their friends, and family members that: *one* – they need to check with their doctors and pharmacy to ensure availability of their prescriptions during the transition to the year 2000, and *two* – if they use a medical device, then they should check with their doctor or supplier in advance to make sure that the equipment is Y2K-compliant.

People on Medicare have already lived through many changes and hardships. Most do not own a computer. They are probably not overly concerned with the ability of computer systems to transition smoothly into the year 2000. We do not want to instill fear in people on Medicare. It is our job, as professionals who work closely

¹ An Office of Inspector General report finds that HCFA has neither the staff nor resources to oversee Medicare HMOs. Department of Health and Human Services, Office of Inspector General, April 1998.

with seniors and people with disabilities on Medicare, to educate our clients on how to get the care they need when they need it. We are telling our clients to ask their doctors, pharmacists, and medical suppliers if they are Y2K-compliant. We hope that Congress and HCFA will do whatever possible to make sure that people on Medicare keep getting the care they need in the new millenium. Thank you.

Report Numbers: OEL-01-96-00190 and OEL-01-96-00191.

Testimony of Joseph R. Baker III, Esq., Medicare Rights Center, September 27, 1999
www.medicarerights.org

Mr. HORN. We're now going to go to questions, and we're going to treat ourselves the way we treated you. Each person will have questions for 5 minutes. We'll have another round. And I'm going to start with yielding my 5 minutes to the co-chairwoman, Mrs. Morella of Maryland, and then we'll have it to Mr. Turner for 5 minutes, and if they haven't covered it all, I will take 5 minutes. So that's the way it will work.

Mrs. MORELLA. Thank you, Mr. Chairman. You're very fair about that.

And I must commend the panelists. You all stayed within the time limit. You all presented your statements very succinctly, and I applaud that.

My question will be basically to GAO and HCFA to begin with. The 425 managed care organizations serving 6.9 million Medicare beneficiaries of the 39 million Medicare beneficiaries were never deemed mission-critical by HCFA, and the latest HCFA reports show that few of these managed care organizations are Y2K compliant. My question is, why weren't the managed care organizations deemed mission-critical if they're serving 6.9 million Medicare beneficiaries? In other words, why are they deemed different from the fee-for-service contractors?

Dr. CHRISTOPH. That's a complex question, Congresswoman Morella.

The managed care organizations are different from the Medicare contractors in that the managed care organizations contract to provide a service. They contract to provide care. The Medicare contractors are contracted to provide processing of claims. What we have asked the managed care organizations to certify to is not only that they will make their systems ready by January 1st, 2000, but that they continue to provide operations and continue to provide care to the beneficiaries enrolled. In a sense, it doesn't matter what systems they're using to back up their operations. What they have contracted to do is to have providers provide care, and that's fundamentally different from how the Medicare claims processing contractors operate.

Mrs. MORELLA. You also changed your mind, too. I mean, at one point weren't they going to have to report, you know, later on in 1999 and then you rescinded it?

Dr. CHRISTOPH. I am sorry, can you repeat the question?

Mrs. MORELLA. Yes. My understanding is that HCFA originally requested that the managed care organizations recertify in 1999 and then later rescinded that.

Dr. CHRISTOPH. No, we have not rescinded it. We have—because events overtook that original statement that we were going to have them recertify, we subsequently decided we needed to watch them more carefully. So we demanded of them their contingency plans. We, subsequent to that original determination, have gone out and visited the plans that we thought had the highest impact. So we were rethinking whether or not recertification was necessary. They'd already certified, they'd already testified that they would be operational come January 1st. However, we just revisited that and, in fact, today have—are issuing the letter requiring that recertification statement of the managed care organizations.

Mrs. MORELLA. You just did it today?

Dr. CHRISTOPH. Yes, ma'am.

Mrs. MORELLA. Great timing. That's great.

Mr. Willemsen, would you comment on that?

Mr. WILLEMSSEN. Yes, couple of points. We're very encouraged to hear that HCFA has decided to go out with that certification statement on managed care organizations. We think that that can go a long way toward giving further assurance that these organizations are indeed ready. I think before any organization wants to submit a certification they will want some extent of evidence internally that they are ready. So I think that's a step in the right direction, and this is the first we've heard of it, so I'm very glad to hear that.

In terms of your prior question on why the systems supporting MCOs were not mission-critical, in retrospect there should have been some, in my opinion, designation of mission-criticality. Probably not identifying 425 or 383 systems but—and it's easy to sit here now and say that, in retrospect having some designation in the quarterly reports that these also are fairly important organizations serving almost 7 million beneficiaries. I think now that the level of attention has been brought to bear on managed care organizations that that will assist in making sure that whatever can be done in the next few months is done.

Mrs. MORELLA. Very good. I guess looking at the lights I have a little more time, and maybe I'll try to also get into the ACP-AISM question with HCFA, also.

Based on data that was presented I understand last week at HCFA's Y2K electronics submission summit, 60 percent of the part B providers, which is equivalent to about 500,000 physicians, are not prepared to submit Y2K compliant electronic submissions. What actions is HCFA taking to remedy that situation, and, you know, what recourse might they have?

And I am going to ask you if you would comment on that also, Dr. Addington.

Dr. CHRISTOPH. I think you've made a very important point there, Congresswoman.

We have endeavored in all of our outreach to encourage providers to get ready, and we have told all of our contractors that they must be ready and able to test with submitters. The response has been very disappointing. As we testified, the difficulty is, in all of our outreach, as GAO has noted, we aren't reaching all of the providers. The ones that show up to our conferences, to our presentations are probably the ones who are most aware and most worried. It's the others that—who aren't getting our message—that concern us.

We've been trying to be more focused. Last week, in Washington, we had a conference with organizations that submit claims and clearinghouses, and we discussed with them ways to encourage more testing with us. Our goal was to make available to providers as many resources as we can so they could test, but while bringing the horse to water, we haven't succeeded in making them drink yet. So that's where we're trying to focus our outreach efforts, is convincing them to make use of what we've been able to provide to help them.

Mr. HORN. Thank you very much, and we now yield 5 minutes to the gentleman from Texas, Mr. Turner.

Mrs. MORELLA. Mr. Chairman, Dr. Addington can later fill in on that, please?

Mr. HORN. Sure.

Mrs. MORELLA. Find out what he's going to do to whip these physicians into shape.

Mr. TURNER. Thank you, Mr. Chairman.

It seems to me our discussion on Y2K compliance by managed care organizations probably gives us an opportunity to shed a little light on the relationship between the government and managed care and the beneficiaries, and I might ask Mr. Baker, first, to comment on this.

I was noticing in your statement you made the comment that HCFA cannot guarantee that Medicare HMOs will be Y2K compliant, and a few paragraphs later you asked the question, what tools does HCFA have at its disposal to ensure that HMOs provide people on Medicare with the care they need? I'd like for you to perhaps comment a little bit on that, and maybe Mr. Christoph can add a perspective from the agency point of view. I am not sure what control HCFA has over these managed care organizations, and we're talking about the GAO's request that they demand a certification after the agency seems to be somewhat reluctant to do so.

Now they announce they're going to require it again. I am not even sure what legal rights HCFA has to demand such from these managed care organizations. Is there something inherent here with regard to the relationship between HCFA and managed care organizations that makes it a little difficult to secure compliance in the Y2K area or in other areas relating to care?

Mr. BAKER. Well, I think that there has been issues, as I think all of us are aware through GAO reports and others, around HCFA's ability to oversee the Medicare managed care program and to make sure that Medicare HMOs are providing the care to people on Medicare that they deserve and are eligible for under the program.

As I said in my testimony, I think the Y2K issue highlights the inability in many instances of HCFA to appropriately oversee the managed care organizations. I think that HCFA has made great strides in recent months and in recent years in oversight of the managed care organizations, but I think, you know, in our hotline, time and time again, and while this information is anecdotal, I think it's still that we can see these trends arise where managed care organizations and Medicare HMOs just don't seem to know or are literally, you know, unconsciously not following Medicare coverage guidelines but instead putting their own coverage guidelines or their own ideas about what Medicare should and should not cover into the mix, whereas that really isn't appropriate or allowed under Medicare regulations.

There is a real flaunting of the rules in many instances, and in other instances just an ignorance of the rules, which is just as bad when it means that people are not getting the care that they are entitled to and need.

Mr. TURNER. Dr. Christoph, do you see the managed care and Medicare HMO organizations flaunting the rules, as Mr. Baker is referring to?

Dr. CHRISTOPH. That sounds more like a policy issue, and I am not prepared to talk about how the rules are enforced. I don't personally see that. I am preoccupied with the systems kind of issues.

Mr. TURNER. What is your legal authority specifically to the Y2K compliance issue to tell a managed care organization or a Medicare HMO that you have to give us a certification statement of Y2K compliance? Do you have that authority?

Dr. CHRISTOPH. We have very few levers to exert on the managed care organizations. We have required that they submit documents. We don't have much legal authority about how a private business that is contracted with us carries out that business. So other than getting them to certify that their systems will work or that they will deliver a quality of service, we have relatively few rules or levers to exert on them.

Mr. TURNER. Mr. Willemssen, do you believe that we need greater legal authority to require managed care organizations to certify or maybe in other areas other than Y2K certification?

Mr. WILLEMSSEN. I think, with the limited time remaining, an approach that has worked in other sectors is, whether the legal authority is there or not, HCFA can request the information and then publicize the results by organization and say we asked 383 MCOs for certification information and here is what we got back by organization. If certain MCOs don't want to provide the information, that fact can also be published.

My concern is that, in the limited amount of time available, I don't know that a full accounting of the legal intricacies can be done, and we may have to take more of the approach which has been done in the biomedical device area where the publicity of individual organizations and what they have reported ended up dramatically increasing the response rate.

Mr. TURNER. Has Y2K compliance been a factor in any of the 52 HMOs that have dropped out of providing Medicare managed care?

Dr. CHRISTOPH. I am not aware of why they chose not to stay in the program. It possibly is, but I can't answer that with certainty.

Mr. TURNER. Mr. Baker, it seems to me that it is difficult to know whether HCFA can ensure that HMOs are providing Medicare beneficiaries with the care that they are entitled to.

I think I have always held the view that we inadequately reimburse our providers now under the Medicare program. Many of our rural hospitals that I represent are having difficulty keeping the doors open, and yet somehow we think that a managed care company can provide that same care cheaper and make a profit while they are doing it. It seems like a difficult thing, but I guess you would concur that we do need to have some tightening up in terms of the control that HCFA has over managed care organizations?

Mr. BAKER. That is right. I think we need more control and oversight. At this stage of the game, we need more information to go out directly to consumers about what they can do, what are—for lack of a better term—advocacy steps or survival skills. I don't know what kind of social marketing campaign we want to use but something that will give them some information about how to deal with this crisis if it becomes a crisis and how to get the care that they need should they keep hearing no. What organization will be there for them should they need care and can't get it. I think we

need to give some of those answers so they can start preparing for it. Not scare them with that information but at least start to train them about how they might have to meet this situation.

Mr. TURNER. Thank you.

Mr. HORN. We will have another round on this.

I yield myself 5 minutes, but first Chairman Morella wanted I think Dr. Addington's answer to the question that was asked of Mr. Christoph, so let's get it on the record.

Dr. ADDINGTON. Thank you, Congressman.

First, let me say that, responding to Chairwoman Morella's suggestion to whip them into shape, I am reminded of the old saw that "whipping physicians into shape" is sort of like herding cats.

I would like to think that our members whose systems have not been tested will respond. Many of our members are part of huge organizations. I would say 50 percent of our 115,000 physician members are part of large organizations that have considerable expertise. I personally am a faculty member of such an institution, and we have been thoroughly checked and tested.

It is the 50 percent that do not have the expertise in-house. In a two- or three-physician practice, clearly the person who sends out the bills is probably the most sophisticated member of the office. Nonetheless, we are confident that we will get our college approach to this and insist that every member avail themselves of our Tool Kit and of our capacity and expertise in identifying for them those individuals in their community that should be contacted to actually do the testing.

So I think the prognosis is excellent for internists. I think there will be some problems, but I trust that those will be straightened out rapidly.

Mr. HORN. Well, thank you for that very full answer and optimistic answer.

The first time I ever heard the expression you used, herding cats, was my first year here in 1993; and my wife, looking up in the gallery, concluded after one evening of voting was that the Members of the House of Representatives are like herding cats. You are looking at a tenured professor, and they act more like herding cats than anybody. Nobody can touch them.

Dr. ADDINGTON. Well, we are in good company then.

Mr. HORN. You are in very good company. The cats might get upset if they are listening here.

On the recertification testing, HCFA, their mission-critical systems, are their systems now compliant, the internal ones?

Dr. CHRISTOPH. We went through a thorough round of testing and certification last year. All of our internal systems, including the systems that send money to managed care organizations, were certified as compliant by December 31st last year.

We made changes to those systems. Any computer system evolves. We have had to incorporate some changes because of congressional mandates and maintenance. GAO has recommended that we freeze those systems and make sure that any changes that have been made haven't influenced their Y2K certification.

A lot of folks in industry will only test the changes that they have made. What we have done is to put a program in place during this freeze period of retesting everything. We are putting them

through all of the rigor and the tests that we did before, including future day testing. That round of testing should be done in November.

So I guess the short answer is, I believe our systems are ready, but we are going after double assurance, and that is why we are doing such an intensive retesting, recertification, plus the addition of quality assurance tools like Mr. Willemssen mentioned.

Mr. HORN. The recertification done by outside verifiers, how have you handled that?

Dr. CHRISTOPH. The testing itself is done by internal staff and contractors that are basically providing staff support, but we have an IV&V contractor that is looking over our shoulder every step of the way, validating our procedures and looking at the test results and, in fact, signing off on the certification statements. So we are having independent evaluation to keep us honest.

Mr. HORN. When you went through this testing and the certification, what was the magnitude of Y2K errors? Did it seem to be a very important thing where you had more than one aspect of it and you might have had 10 times that it would cause mischief? What did you get out of that testing and recertification?

Dr. CHRISTOPH. Well, the original round revealed that we did have some issues, and that is the whole point of testing, is to show you what works and what doesn't. Yes, we found issues, and we fixed them. I don't think that we had any more Y2K bugs than are common in codes of this magnitude. Some of our systems are over a million lines of code on the internal side.

After renovation, we have been using quality assurance tools, and we find in looking at them that the things that were missed were the things that these tools point up. Actually, far fewer than what I read in the trade press about the frequency of errors in renovated code.

Mr. HORN. Mrs. Wilkey, I commend you for your hard work to assure that Blue Cross Blue Shield of Georgia is year 2000 ready. What have been the critical success factors for you?

Ms. WILKEY. I think the critical success factors would be getting out in the vendor world and getting their attention, first of all. That was a big chore for us.

Providers have a tendency to leave things when it comes to their billing up to vendors, and you have to work very closely with the vendors and the clearinghouses in order to get the providers to do what you need them to do.

The 98 percent test factor that we have now we feel good about. We have gone through DDE tests, direct data entry system testing. We have gone through electronic remits. We have come through electronic funds transfer, and it is good. If we can get the remaining 1.75 percent going—

Mr. HORN. What do you see as your biggest remaining problems and concerns? After all of this outreach that you have had, what worries you the most, if anything?

Ms. WILKEY. That 1.75 percent that has not tested, that I have to knock on their door and do surveys and say why are you not testing? Are you going to pay the providers if you cannot send me a claim? That worries me.

Mr. HORN. It sounds like you are keeping after them, and that is the only way that it is going to get done.

I now yield 5 minutes to my colleague from Texas, Mr. Turner.

Mr. TURNER. I don't have any other questions.

Mr. HORN. Mr. Brown, there has been some question that the biomedical equipment could fall victim to year 2000 failures. What equipment is still at risk due to your year 2000 problems?

Mr. BROWN. I think in the scheme of things, Chairman Horn, medical devices and equipment was really the first priority, along with the information systems and infrastructure, and I think hospitals are working with the FDA and working with our vendors and doing the testing. And I know in my own organization, which consists of 14 hospitals in metropolitan St. Louis and medical centers in urban and suburban areas, we went through an extensive testing program.

As I have traveled the country and talked to different hospitals and as we have had the dialog, the equipment piece of it is No. 1. We have worked very closely with the vendors. We have done the testing and worked with FDA. We changed a lot of equipment.

The other thing is to be assured that equipment has overrides on it, and that we have adequate staffing to be able to make that transition. So I feel that the hospitals—in working with HCFA and the FDA and others on equipment issues—that we really have done a significant job in terms of working on a cooperative basis to be sure that the equipment will be functional and that there is adequate staffing to support that equipment come January 1st and during the transition.

Mr. HORN. When we were in Cleveland about a year ago we had testimony from the representative of the Cleveland clinic as to how they were going about looking at the various pieces of equipment to make sure that they are year 2000 compliant. Apparently, there was and maybe still is a website nationally where hospitals can plug into that by getting into the web and you can describe the name for the piece of equipment, what the model number is. We were worried about the chips, that a lot of people don't even know where they are in the equipment. What is going on on that?

Mr. BROWN. A couple of things. We have been working closely with HHS, with the FDA, with HCFA. We have worked with the vendors. There are websites that the FDA has put up. We have our own websites on which we can convey information to our members across the country. We have set up communication devices between the American Hospital Association and each of our 50 State associations working with their members. So we are continually dialoguing and making available to them information where they can access the websites.

Mr. HORN. For the manufacturers of some of the equipment years before we ever knew there was a problem here, have you found that they have been cooperative?

Mr. BROWN. Over the last 6 to 9 months they have been. We have had several manufacturers who through our publications and periodicals, through communications indicated that they are Y2K ready. So we found good cooperation.

Mr. HORN. One of the things that we have looked at in about 10 different field hearings is the backup power. This is particularly

true of hospitals. What is the estimate of what a minimum is that a hospital should have in order to have generators that are run on diesel or whatever it is?

Mr. BROWN. You should have the ability to run for a period of time and have access to additional fuel, and I think hospitals really have focused over the years on disaster recovery. And I think as we have gone through the issues with the hurricanes and the natural disasters, the flood in Missouri in 1993, hospitals have been working with their fuel suppliers and utilities in terms of backup.

You have contingency plans with other institutions in your metro area. In St. Louis, for example, we have 35 different hospitals that communicate with each other in terms of availability of beds and ability to transfer in emergencies. So this is routine for disaster planning.

Mr. HORN. How many days do they need to get through a black-out or brownout?

Mr. BROWN. We have the capability of normally 3 to 5 days to be able to get through the blackout.

Mr. HORN. Let's hope it does.

On the provider testing with contractors, we know it has been limited, and until these data exchanges between the providers and contractors are future-date tested, the ability of these entities to process Medicare claims in a future-date environment is unknown. Why doesn't HCFA do the end-to-end testing program to include providers? Is it too late to include them or what? Or are they just ornery?

Dr. CHRISTOPH. Well, they are certainly not ornery, sir.

We have done end-to-end testing. As you know, the claims processing systems are batch systems. They don't operate in the same sense that credit card transactions occur, but claims are batched up at the beginning, whether they are submitted electronically or on paper and, that point, defines the one end of the claims processing system. They then go through the system and are adjudicated. It is on the back end of the process that the instructions for payment or printing of notices, such as beneficiary notices, come out. That is the other end.

We have engaged in end-to-end testing, everything in between, including a connection to our common working file that is tested in a future-date environment.

We have tried to cover the front end where claims come in by requiring submitters to submit claims in the proper 8-digit year format. April 5th of this year we set a hard date, and by and large now everyone is using that.

So that means that once a claim hits us and if it is in the proper format, we can process it.

Now the difficulty is in determining whether or not providers or submitters can actually get us a bill. It is possible to take existing systems that a submitter has and put bridge software in place and translate the dates so that it is in the proper format, but that does not tell us anything about the submitter's system, its readiness or the provider's systems or readiness, and that is why we have engaged in this outreach effort to reach them and encourage them to test. We have made available to them the opportunity to test with our contractor's front ends.

Again, we have made that available to them, but getting them to come in and test, there is some reluctance there to test. Perhaps they are not ready. Perhaps they just don't feel that it is necessary. We think that it is, and that is why we have been strongly encouraging them to do so.

Mr. HORN. Well, as I understand it, the General Accounting Office has informed us that the status of contractor business continuity plans is unknown because the HCFA never requested detailed plans from these contractors. Is that true or have we changed that now?

Dr. CHRISTOPH. We changed that. Some time—and I can't tell you exactly when, but it was fairly recently, we did send a requirement to the contractors to make that information available, to have those documents onsite available, and we are going to be checking and reviewing those on our next round of visits. We have had onsite staff looking at them. We have had the IV&V folks going with us for all of our oversight on the contractors. As we go out and review their status and progress, we will be reviewing that documentation, and we have invited GAO to participate on some of those visits with us. So we are trying to get that paper documentation.

I might add that the fact that we came through Hurricane Floyd so well, quickly making up for the 2 days that the processing centers were shut down there testifies to the quality of our contingency readiness. The Florida data center handles the claims from 6 States worth of fiscal intermediaries. They didn't have power for 2 days. They came up again after the hurricane passed through and made up all of that backlog. One of the contractors transferred its operations to a hot site in Connecticut and maintained operation.

So we believe that those contingency plans are real because we have exercised them, but without being able to present GAO with a documentation to back that up, of course, they came out with their conclusion. But I believe it is there because we have demonstrated, as in the hurricane, that we can operate through that.

Mr. HORN. Since this is a paper processing operation, what is the typical contingency plan? How would you boil it down?

Dr. CHRISTOPH. I am not sure that there is a typical contingency plan. The contingency plans look at the impact of whatever the event is. In the case of Hurricane Floyd, it was a power outage. We are required to pay claims—electronic claims after the 14th day. We look at the duration—the possible duration of the event and decide on that basis how we are going to deal with it. In this case, the duration was relatively short, and we dealt with the contingency of not being able to process claims those 2 days by adding time in the evening in order to make up that processing. That, in effect, took care of the problem transparently to the submitters.

Mr. HORN. Assuming that, given modern medicine and all of the replacement parts that we get, that we might be around in the third millennium, if you could start over what would you do differently to solve the year 2000 computer program?

Dr. CHRISTOPH. As a systems programmer who has cut code, I would certainly do a better job at the front end of writing code, anticipating these problems. I think 20, 30 years ago when we were

writing such code, no one believed that the software would be around this long, and I think if we are more careful about how we develop and write software up front and anticipate these problems, the problems won't be there.

Mr. HORN. Was this mostly COBOL at Medicare?

Dr. CHRISTOPH. Yes, 80, 90 percent of the code is COBOL. There is a significant portion of assembler language, though.

Mr. HORN. Interesting.

Do any more questions come to mind?

Mr. TURNER. No.

Mr. HORN. We are going to ask that the record be held open for 10 days. We understand that some managed care organizations would like to add their statements, and that is fine. We will give them to you and if you wouldn't mind responding to their statements so we can get a complete record. All of the witnesses actually can do that.

I thank you for your testimony. I am especially pleased to learn that the Health Care Financing Administration decided to require year 2000 certifications from the managed care organizations that currently provide managed care to 6.9 million seniors in the country. We have encouraged these Americans to enter managed care programs as a way to curb rising health care costs. The very least that we can do for those who have joined these programs is to ensure that their medical care will continue, whether the date is December 31, 1999, or January 1, 2000.

Obviously, much work remains in all segments of the Medicare program. Time is running out. That combination of events demands that, at a minimum, HCFA and its vendors and contractors need to immediately begin coordinating a thorough end-to-end business continuity plan.

That said, and thanking the staff here, we will adjourn.

J. Russell George, the staff director and chief counsel, is back against the wall; and Matt Ryan is right next to me. Bonnie Heald, professional staff member/communications director, against the wall. Chip Ahlswede is the clerk, and P.J. Caceres is an intern.

With the Technology Subcommittee on Science, we have Jeff Grove, staff director; Ben Wu, who has been with us, professional staff member; Joe Sullivan.

And from Mr. Turner's staff on the minority we have Trey Henderson, minority counsel, Jean Gosa, staff assistant.

And the Technology Committee ranking people are Michael Quear, the professional staff member, Marty Ralston, staff assistant.

And your testimony was so fascinating we had to have three court reporters, so Melinda Walker, Doreen Dotzler and Cindy Sebo.

With that, we thank all of you for coming and spending your time and advice with us. Thank you.

We are adjourned.

[Whereupon, at 3:31 p.m., the subcommittee adjourned.]

